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THE VALLEY FARMER,

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SAFE FARMING.

What a farmer wants, is success; and he wants it immediately. If your book or your newspaper tells him what to do, he wants to be certain: he cannot afford to experiment. Well-to-do farmers may do that. But the man who buys a farm, or but a few acres, does it to reap benefit from it. He may have a family dependent upon his first year's success; or he may have debt to pay, which is generally the case. He must have success the first year, and the years immediately after. If not, he may lose his farm. Success in farming, as in life, is what we want.

"Can I depend upon my book? Will my *Valley Farmer* or other agricultural journals not deceive me? I want to know this, if I am to follow their directions. They are published to make money; that is clear. Do they also look to the good of the farmer?"

Yes, if your publisher is honest. Or, if not, it is for the interest of the publisher that he print what is beneficial, for that is what his paper is taken for. It is necessary then to at least appear honest.

The young farmer, beginning life under such delicate circumstances—of debt and dependence—should not fear. If an agricultural book or paper misrepresents, it is only what the world sometimes does;—in all its departments (the world's) defects are found; necessarily found, because human affairs are imperfect.

But our best agricultural books and papers are to be relied on; not of course always, for there must be more or less theory connected with the practical. It is theory that starts the practical—helps it along. The reader must have intelligence enough to discriminate. An ignorant farmer will not do. He will drag along; no more. Our best farmers are our best thinkers; not our richest always, for some people have a great faculty for saving. We know many such, with a good deal of native shrewdness, and more of parsimony—these people know how to hoard, how to strike a good bargain as well.

But good common sense should the farmer bring to his vocation. He will then see what is merely opinion, and what is fact. He will not trust his year's farming upon a vague statement. This he will do: when he sees his neighbor's success, he will inquire into that success. If that neighbor is an honorable man, he will tell him about the *modus operandi* of that success; not the success of one year, but success generally; and relate what he knows about the matter; and that is no more nor less than communicating his success. Now this honorable, successful farmer, not only communicates to his neighbor, but also to agricultural papers. Such

men write our successful farming books. You want to know your man then; and you want to know him by his success. As you must have *some* pattern to follow after, take the successful kind of farming, practiced by honorable men. That is the whole nut of the secret. Example is the grand lever in farming. If super-phosphate is used, and fails, it is not because this fertilizer is a humbug, for it is known that super-phosphate has a great effect. But there are quack super-phosphates, as there are quack bank bills: good things are very apt to be counterfeited the world over. The farmer must, therefore, *look out*. He has several fixed principles to go upon; things that he can rely upon to pay his debts and support his family. These are:

He knows that ground naturally rich (that is, rich when he buys it), will produce; he can rely upon this; and all he needs to do is to give it the ordinary farming.

Next, he can rely upon manures—the excrements of all animals, all rotten matter. There is of course a difference of application; but the benefit will be there in a year or two at the most; and a man cannot well hurt his land with manure; it would require more study to do it, than to apply it correctly. All farmers appreciate manure; all use it with benefit, and in all ways. Manure, then, is perfectly safe—as safe to be trusted as a man's natural, rich soil. We have known the most ignorant farmer to succeed on such farms—naturally rich, and kept so artificially, i.e., by applying manure.

Further: The farmer may be sure that guano (the dung of fowls) is reliable. (This comes under the preceding head—but we wish to *impress* upon the reader.) Its extensive use has long since demonstrated this. Plaster on clover and peas is another certainty. So is lime, on all soils where lime has not been used, or where there is no limestone soil. So are wood ashes.

Another thing: It is certain that it is good to keep a farm free from weeds, and the ground thoroughly stirred, when in the proper condition, that is, neither too wet nor too dry. Generally thorough cultivation insures destruction of weeds. For a man to sow foul stuff, is unwise. No man intentionally, and very few knowingly, does it.

We have thus stated a few things which are reliable in farming. There are many more, principally smaller matters. These (those we have enumerated) are enough to insure success. There need, therefore, be no fear in the purchase of a home. Invest your money—yes, and run in debt. Debt has a bad odor. But it is sweet, after all, to be able to meet your debt—to have a prospect in view; for money made, whether paid on a debt, or laid up, is so much gained; and that is what we are after, all of us.

It will be seen, therefore, that a discrimination must be made, not only in the practical part of farming, but in reading your books. It requires no fool to understand what your true farmer says; so it requires sense to understand what you read. And if you read carefully good farming journals, they will lead you to success—for they tell you what the best farmers do.

HEADERS.

Ed. Valley Farmer: In your December No. of last year, I published a letter making inquiry as to the utility of headers, to which there were several replies in subsequent numbers, all except one being favorable to their use.

I relied upon the statements made, and purchased at Belleville in this State, as recommended, one of Mayberry's, manufactured at Rockford, Ills. There were many doubts and misgivings expressed by my friends and neighbors as to its answering the purpose for which it was intended, but I never lost faith in the advice given by those gentlemen who were so kind as to reply to my inquiries, and I rejoice to say that I was not disappointed, and here I would publicly thank them for their prompt and candid replies.

I have no interest in making this communication, but I feel it a duty I owe to others in my position to make known to them through the *Valley Farmer* the advantages of cutting and saving grain with Mayberry's Harvester.

I cut and ricked a little over 100 acres of wheat in five days and a half, and no one connected with the operation had ever before seen a header. My force consisted of seven men and two boys. Three wagons were said to be sufficient. So they would have been had I ricked in the field, but I had it put in a shed built for the purpose. This arrangement caused a great deal of delay, as the distance to haul was greater, and it was more difficult to rick in the shed than to have made those ricks in the field. The result was, that the header would have kept at least another wagon going.

I had the ricks in the shed ventilated, and not having room for all, I built two ricks outside, without any cover or ventilation, and found upon threshing, a few weeks ago, that both what was inside and outside were in good order.

It may be proper to add here, that the wheat was riper than I intended, owing to Mr. Mayberry's having promised to come and start the header, but he was taken suddenly ill at Belleville, and could not fulfil his engagement. I sent a horse for him, and as the horse was not returned, I still expected him, till I got tired of waiting, when I had the machine put up and went to work. I had a little difficulty at first, having put four of the best horses to the header, they were not sufficiently gentle. I had them taken out, and put in four old mares, that took it quietly and ended the trouble.

As an evidence of the wheat being in good order, I would state, that I sold to three of my most particular neighbors seed.

I had one man for driving the wagons alongside the header. I never had so little loss on my wheat. The wagons being tight, the shelled wheat was saved. Another advantage that I find, has not been spoken of—the facility with which headed wheat is threshed.

JOHN WALKER.

Prairie du Rocher, Ill. Nov. 4, 1863.

CROPS IN LOWER EGYPT.

ED. VALLEY FARMER: We have had an uncommon cold spell of weather here this fall: indeed, it has been cool all summer for this country. For a few days back, the ground has froze quite hard during the night-time, but not hard enough to hurt potatoes that were not dug.

COTTON.

Cotton has had a poor chance this year. The forepart of the season was very dry, when we ought to have had rain to make the seed sprout and come up. After the cotton was up, it set in to raining, and rained for a long time, almost incessantly, so that the plant got the "sore shinn," and also very foul with weeds, because the ground was not in order to cultivate. At last the weather turned cold and dry, and although the ground was kept clean, the cotton would not grow, but dried up a great deal. Early in the fall there came a hard frost, which killed part of the cotton on the lowland and some on the hills; but the bolls that were of any size commenced to open slowly, and would have opened out in the course of a few weeks. The farmers have already picked considerable cotton, but this last cold spell froze the bolls, so that the cotton in them rotted as soon as they thawed out. So the cotton crop in Southern Illinois ends for this year. It cannot be more than half a crop.

TOBACCO.

This staple was the main dependence of many farmers in this section. Some cut and cured a small quantity before the first frost, which came in the latter part of September, but the greater part was killed.

SORGHUM.

Sorghum was not hurt much by the frosts in this part of the State. The people here say that the cane raised this year is far better than last. There was not near as much planted as there was last season—when there ought to have been more; but the folks got sick of so much more molasses than common and concluded to go without a spell.

The people in this country do not seem to have the enterprise that they have in the North. There they run sorghum mills by steam and have the molasses refined; but here they think if they have a small-sized Cook's Evaporator in a settlement, they are doing things on a large scale. Many fix up wooden rollers, turned off hickory or some other hard wood, and run them by a blind horse that will do for nothing else, and boil the juice in iron kettles, generally without much skimming.

POTATOES.

This is no country for potatoes; there has been but one good crop here in six or seven years. I know of persons that planted 5 bushels of seed, that will not get more than eight in return.

CORN AND FODDER.

It has been a poor year for corn, there are but a few pieces of good corn in this county, and they are on low bottom ground, and will not turn out more than twenty to thirty bushels to the acre.

The way people make fodder in this country, is to pull the leaves or blades off from the corn in a green state, let them cure a day or two and then tie them in bundles as one would wheat. This practice came from the South. It suits the men very well. There, the young negroes did the work; here, the women and children do most of the fodder pulling.

This season the corn blade got frost bitten, so there was none to pull, consequently fodder is scarce.

Times will be hard this winter here, but I guess we can "weather it through."

Green apples, 75c. per bush. White wheat $1.10@1.15; red winter, $1.05@1.10. Potatoes, 75c@90 and $1. R. M.

Dongola, Union Co., Ill., Oct. 25, 1863.

Drilling in wheat, instead of sowing, is getting to be much practiced.

Preparation and Management of Lawns.

The following essay, which we copy from the *Gardener's Monthly*, was lately read before the Pennsylvania Horticultural Society, by William Bright:

"The first important point in the preparation of a lawn is to obtain an open, porous, well drained soil, of good depth. To this end, if the soil be naturally wet, it must be drained in some manner, either by tile or stone drains. If sufficiently drained, the requisite depth may be obtained by thorough plowing and sub-soiling, using such plows and such force of team as will open the soil to the depth of eighteen inches at least. On grounds of any extent, this is cheaper than trenching, and quite effectual.

The sub-soil plowing should be performed in the dry weather of the summer or fall, previous to seeding the following spring. Free harrowing is of course useful.

The quality of the soil must next receive attention, and it is vastly important that this should be of uniform quality all over the surface, and of uniform depth. Nearly all lawns are graded more or less, and when this is done, be careful that the soil is kept of uniform quality and thickness. The surface soil must frequently be taken off large spaces, and after the grading has been done, it must be re-placed in such a manner that it shall as nearly as possible resemble in quality and depth the natural soil of the lot.

Sandy soils, as everybody knows, may be greatly improved by a dressing of clay, or good clayey loam, and clay soils by the addition of sand. This is a simple fact, but one not sufficiently heeded in the hurry which usually attends the preparation of new grounds.

As to manuring, if the land be very poor, it may be heavily manured in the fall, with good, short, well-rotted stable manure; or with a compost of muck and stable manure. Bone-dust, super-phosphate of lime, and wood ashes are of course valuable additions to such a compost. If the land is good—that is, good corn or wheat land—it will need no manure. It is not so much richness of soil as depth, freedom from excess of moisture, and uniformly good texture and good quality that we desire. Mixing poor and good soil, in spots, in various parts of the lawn, when grading, will produce a sod which can never be made of uniform color and beauty by any future dressing or manuring. The soil must be of uniform good quality and uniform depth, to make a good lawn.

The treatment of the lawn, the first spring after it is graded, will be as follows: The first day, after the frost is out of the ground and the soil is sufficiently dry to be worked, let the winter-washed places be repaired, then harrow the whole surface carefully, and if not quite smooth, hand-rake the rougher parts, using also the roller if necessary to obtain a fine smooth surface. A little lime and well-rotted compost may also be applied at this time if required.

The seed should be sown as early as possible, say the 15th of March in this region. Sow on recently harrowed ground, not too rough. The seed needs to be barely covered with earth. It is better, perhaps, after sowing to cover the seed with a hand-rake, using both teeth and back of rake to cover it. Or it may be covered by the back or top of a light harrow drawn over it.

It is not desirable to sow any sort of grain with the seeds for a lawn, nor to sow a great variety of mixed grasses. The best grass-seed is the common green grass (*Poa pratensis*, otherwise known as Kentucky blue grass, June grass, &c.)

As soon as the seed germinates, and the grass comes up an inch, on a dry day pass a light roller over it. When the grass is 3 or 4 inches high, cut it with a sharp scythe as closely as possible. Mow it with the blade of the scythe hard on the ground. Cut the grass every two weeks during the summer in the same manner. A little hay may be obtained by spreading the grass when cut, very thin, and moving it once a day, without injury to the lawn. But it is better to mow often and close, and remove the grass at once, using it for mulching trees, &c.

Take out dock, dandelion, and other large coarse plants and weeds, with a chisel on the end of a short pole. Pull red clover by hand, but no small weeds will need to be removed by hand if the lawn is mowed often and closely as directed, every two weeks. The grass will soon overcome the small weeds.

Mow very close the last thing in the fall, to keep mice from harboring in the old grass.—About the first of November, or later, top-dress the lawn with compost or manure, if necessary, and hand-rake smooth and clean.

Rake the surface of the lawn in the spring of the second year, and every year thereafter, as hard and close as possible, with an iron rake, to take out the old grass, stones and sticks; and roll when the ground is moderately dry.

Cut the grass early and often the second year, and very close, the same as first directed.—When the lawn is an extensive one, and well

made, a lawn-mowing machine may be used with great advantage, as often as the grass is three or four inches high. If the grass is five or six inches high, the scythe works best. Use the longest bladed scythe that is made. This gives a more even appearance to the lawn than when a short bladed scythe is used.

The lawn should be so made and so graded, raked and rolled, that the scythe and roller will touch every square inch of the surface. This is of course a point of the first importance.

The great requisites of a good lawn are smooth grading, a good loamy soil of even quality, broken up to a depth of eighteen inches or more, and so porous and well drained that it will readily part with an excess of moisture, and yet of such a character that it will retain a proper degree of humidity to sustain a heavy growth of grass. Well-rotted manure, leaf-mold, clayey loam and clay, of course assist to retain moisture in light soils, and are exceedingly useful additions to most lawns. With the points herein enumerated faithfully attended to, there is no difficulty in obtaining a beautiful and durable lawn.

When the reading of the essay was concluded, a discussion took place in regard to the general subject. Mr. Harrison said he did not approve of mixed seeds for lawns. The great object is to obtain a uniform turf, which is not attained by the use of mixtures. The green grass (*Poa pratensis*) endures drouth better than any other, and the leaf is very fine and of a beautiful rich green tint. Mr. Mitchell had tried the Italian rye-grass; it is handsome but not hardy. Mr. Pollock said his lawn was entirely of Kentucky blue-grass or green-grass. It is admitted to be always green, luxuriant and uniform.

An Example.—The *Genesee Farmer* says: A day or two since, we were on the farm of John Johnston, of Geneva, N.Y., the noble old farmer of under-draining celebrity. He remarked: 'The wheat midge never did me much damage.' For thirty years he has fed out large quantities of oil-cake, corn, &c., to cattle and sheep on his farm. He has used more or less lime and any quantity of plaster. He has raised immense crops of clover, and made it into hay, and fed it out to sheep. In this way he has made his land rich. At the same time he has tile-drained every field on the farm, or, we might say, every rod. He has laid over fifty miles of under-draining tile. His land is dry, rich and well cultivated, and 'the midge never did him much damage.' No wonder that he is the great American apostle of high farming.

[Written for the Valley Farmer.]

CULTURE OF POTATOES.

Potatoes do not require a very rich soil, especially in animal manure. A light, dry, loamy soil is the thing. New land is generally successful. Sod also is favorable to potatoes. Too rich a soil will grow rank vines. We have known vines eight to ten feet in length, a perfect wilderness of growth, with no potatoes, or only enough for seed for the same amount of of ground, and that when there was no rot. Manure should be applied the previous year, and a crop of some other grain raised, corn for instance, and that on sod. We remember a case where potatoes where dropped into the old hills of corn—the stubs merely pulled over, the seed dropped in, then put back—and a first-rate crop was raised. Corn ground is good for almost any crop, but particularly for potatoes. Avoid heavy clay soil for potatoes.

Potatoes should be raised, not on a warm hillside. They require a cool, dry place; the north or west side of hills is best.

As to planting there is much diversity. Some prefer small pieces, and few; and others large. The truth is, small pieces grow slowly at first, and if your potato is a late one, will not do. But it gives a greater crop. Hence, early sorts should be treated in this way; but large pieces where sudden growth is wanted, as in the later sorts, for there is nothing so nutritious to the young plant as its own germ-bed. In planting, this discrimination should always be made.

But there is another point of importance in planting potatoes, their distance apart. Where closely planted, whether in the hills or the rows, small fruit is the result, and vice versa. The course between, is just what is wanted. This will give you less small and less large potatoes, and secure uniformity of medium-size—just what is wanted. The flavor and the grain are also improved. There is nothing coarse about such a potato. Twenty-seven inches, we believe, is the rule in England, between the rows, and eight inches in the rows. We find the same success here in the practice of our Irish friends, and those who imitate this mode. Potatoes should be covered about six inches. There is good breathing through such thickness of soil, as the soil is light, or should be.

When potatoes are housed, they should always be kept in the dark. Indeed, were they dug in the night it would be better, if they could be put in dry. Some cover potatoes in the bin with ground; some mix lime in, the lime having an effect to destroy the incipient rot, also to make mellow.

R.S.

THE WANTS OF THE BEE.

We have knowledge of no animal in whose nature are embodied the elements of self extermination to so great an extent as the bee.—Since the instinct for gathering and storing honey predominates over all else with the workers, they very soon fill any ordinary cavity in which they are placed. Indeed, so strong is there determination to work, when honey is abundant, that if they enter the hive laden with the product of nature's richest store of sweets, and there find all the cells filled, either with honey previously gathered or with young brood, they vacate cell after cell containing newly laid eggs, larvæ, or sealed bees, till the entire hive is filled with honey; in consequence of which breeding is wholly suspended, and since the life of the worker is of short duration during the season that honey is most abundant, the colony suddenly becomes reduced in numbers, and not unfrequently are they entirely lost, leaving a hive almost, and sometimes wholly, filled with honey and bee-bread. Hence, were it not for the swarming instinct imparted to them at certain periods, they would in a few years become extinct.

The fact that workers are short-lived having been but recently discovered, may require some demonstration to satisfy the mind of many who are just beginning to give practical bee culture the importance that it demands. This matter is considered at some length in the *American Bee Journal*, 1861, p. 9, also the same, p. 148, where we find the following: "We may estimate that during the height of the honey season, they do not on the average live longer than five or six weeks."

Also see *Taylor's Manual*, London, 1860, p. 15. He says on the authority of Dr. Bevan and his own experience, that "there is no doubt that every bee existing after Christmas was bred during the latter part of the summer or autumn." And on page 150, "They are short-lived, and periodically renewed; a large proportion of the bees at the close of the season are those produced in the latter months."

Many other references are at hand, but the fact must suffice for the present. An Italian queen was given to a vigorous stock of native bees on the 15th of July, and in sixty days after I could not find any native bees in the hive, but it contained a numerous colony of Italian bees. This, with many other facts, coming to my knowledge, satisfies me that the life of the worker, during the height of the working season, is less than fifty days. Hence, we may conclude that the excess of honey stored early in the breeding chamber of the hive is quite fatal to success in bee culture.

A large majority of bee keepers, not being familiar with the habits and instincts of the bee, depend wholly upon luck for success with their bees. And many suppose if they can get their bees into some new fangled notion for a hive, that has been patented by some one who has studied much more on bee hives than on the habits and nature of the bee, then their luck is favorably turned, and their fortune secured. But let it be fully understood that no hive in existence can make a man a bee-keeper.

Hence we must conclude that bees require the intelligent care of the apiarist bestowed upon them at the right time.

Moths may infest a weak colony. They must be removed from the combs where they do their mischief.

A stock may be reduced in numbers so as not to be able to generate heat enough to keep up a hatching temperature in the hive. They must be strengthened by supplying bees or maturing brood from strong ones.

They may lose their queen and can be saved only by giving them another, or supplying them with comb containing newly laid eggs, or young larvæ from a hive that has a prolific queen.

THE ROAD TO POOR FARMING.

As the road to poor farming is not generally understood, though it is crowded with travelers, we throw up the following landmarks from the *Springfield Republican* for the common benefit:

1. Invest all your capital in land, and run in debt for more.

2. Hire money to stock your farm.

3. Have no faith in your own business, and be always ready to sell out.

4. Buy mean cows, spavined horses, poor oxen and cheap tools.

5. Feed bog hay and mouldy corn-stalks exclusively, in order to keep your stock tame; fiery cattle are terribly hard on old rickety wagons and plows.

6. Use the oil of hickory freely whenever your oxen need strength; it is cheaper than hay or meal, keeps the hair lively and pounds out all the grubs.

7. Select such calves for stock as the butchers shun—beauties of runts, thin in the hams, and pot-bellied; but be sure and keep their blood thin by scanty herbage; animals are safest to breed from that haven't strength to herd.

8. Be cautious about manufacturing manure; it make the fields look black and mournful about planting time; besides, it is a deal of work to haul it.

9. Never waste time by setting out fruit and shade trees; fruit and leaves rotting around a place make it unhealthy.

Sub-soiling for Hay.—A farmer in York State, Ulster county, raised twelve and a half tons of excellent hay (Timothy and red clover), from two and three-quarter acres. The first crop was nine and a half tons; the second, three tons. It was raised on land that previously cut one and a half tons of hay from seven acres.—The improvement was effected by manuring and sub-soiling. The soil was a clayey loam. Corn and potatoes were also planted on it, and "proved the best in the county."

How Easy it is *not* to do a thing. Is not this the secret of so much negligence?

IMMEDIATE PROFITS.

We are very apt to look to immediate profits. This is necessary in many cases. But the farmer has also, and that from absolute necessity, to look to the *ultimate* well-being of his farm. His soil may be rich; but every crop exhausts it; and as the strength goes, so goes the capacity to resist drouth, which the farmer finds more or less detrimental every year. He must have an eye out to the future good of his land; and he can do that only by so managing as to secure a good share of the product of his soil in manure. It has long been known that the best of manures is the product of the farm itself. This replaces what came from it. The only improvement that can be made, is that which the farm lacks. But as a thoroughly rich and well-balanced soil lacks none of the necessary ingredients, the manure of the farm, as has been known from time immemorial, is sufficient. A rich soil, then, needs little or no foreign manure; it will sustain itself. This the country has demonstrated in innumerable cases. It is known that clover-roots, already in the ground, are an excellent manure; so are the excrements of cattle dropped upon the soil; so are the wood-ashes made on the place; so is the straw; and so are the green crops plowed in. The farmer needs little else. Lime may be wanting in the soil, in which case its application will be beneficial; but not much where the soil is naturally rich, as lime then is understood to be one of its ingredients, or at least its effect is there. Immediate profits may exhaust the soil; whereas, with rotation of crops, and proper management in general, immediate profits and future benefit may both be secured.

EFFECTS OF FALL FEEDING ON LAND.—In a recent trip through the country, we observed late in the fall, cattle tramping the ground so that it had a muddy appearance. The grass was fed short, what was not trod into the ground. And thus the field went into winter. The frost, of course, will heave the soil, and make sad work with the grass roots. At best the grass (what there is of it) will be late in the spring, and the soil harsh, which will keep the grass stunted all the season through.—There are many ignorant people; and here is one of the positive evidences of it. A coating of aftermath should always be left upon meadows and pastures. And late fall feeding should never be permitted. This is thorough experience, and cannot be gainsayed. Rather purchase feed, than permit your ground to be trod down and your fields fed short.

[Written for the Valley Farmer.]

The Value of Sub-Soiling.

"Is it possible that I must be bored with another article on this hackneyed subject?"

Yes, gentle reader, you must for this reason, hoping that some of the ninety-nine hundredths that seldom read on this subject, may digest the facts here presented. At least one dozen farmers ought to take, read, and write for a practical agricultural paper, where one or less is found on the list. I am foolish enough to believe that one person can be benefitted by the experience of another, on the principle that that which has been done, can be performed again. But to the subject.

To keep up the soil, so as to get good return for labor, is the great question of interest to the farmer. At least one-half of our farms in the North-west should be stocked down with grasses. The more the better, for the soil. Suppose you take a field having rested in grass for a few years, and sub-soil under the sod in the fall, or early in the spring for corn. You can have clean culture, and from 80 to 120 bushels of corn per acre as the result.

Simon Rickart, near Springfield, Ill., assured me that he sub-soiled prairie, Timothy and clover sod yearly, with almost uniform profit. Mr. Rector, near Jacksonville, planted 85 acres on sub-soiled sod last spring, and the result was he was offered 50 cents per bushel, owing to the drouth last season. Good judges says that the yield will exceed 120 bushels per acre. Scores of farmers and others go over to visit Rector's cornfield daily, from Jacksonville.

I presume, if we average the corn crop of this State throughout, there is more on one acre in this field than on ten of the average.

Again, Joseph Morton, near Jacksonville, on sod land, sub-soiled one year ago last spring, sold 60 acres to Morton & Sims for $1,800, or thirty dollars per acre.

These are a few of the many similar results derived from sub-soiling sod.

"Oh, I know sub-soiling is a fine thing, but"—

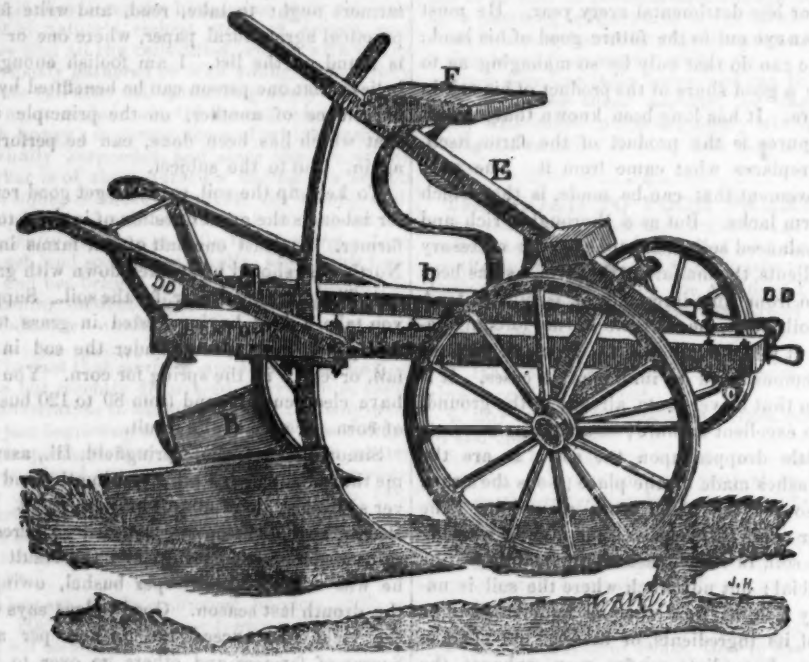
But what?

"Why it takes so much team and time that I am not able to do it."

I would advise you to stock one-half of what you are now plowing, and put the power on the other half. There will be but little falling off in your produce, and a great improvement in your soil.

In conclusion, you ask how can the work be performed? By using 2 two-horse plows, or the Michigan Sub-soil Plow, with a surface and

sub-soil plow on the same beam; or it may be accomplished more perfectly, with greater ease to the team, and a save of the labor and board of one hand every day, by using Burton's Ill-Sub-soil Plow, a cut of which is annexed to this article. If you wish, turn to the 107th page of the Patent Office Report for 1860, and consult the testimony of Sir Edmund Strucey, an English farmer, on this subject; but hoping that you will take more interest in knowing how our farmers can grow 40 bushels of wheat per acre to his 26 bushels, I may trouble you dear reader anon.



DESCRIPTION OF THE ABOVE CUT.

A, is the sub-soil plow, which follows the surface plow, B, in its former passage, and keeps its trench open by means of its extended wing, as seen in the cut. The surface plow, B, is attached to a separate beam, b, and set to land, and back of the sub-soil plow, A, so as to turn its furrow under the wing of sub-soil, while its trench is kept open, thereby retaining the sub-soil on the surface. C, is a bail, by means of which the plow is attached to the axle-tree, and in connection with the attachments, D D, retained in their relative position to each other. E, is a lever, by which the plow is raised from the ground, for the purpose of turning at the ends, &c. F, is the driver's seat. The plow is held and guided by the wheels, and requires no holding while at work. The handles are convenient in turning and handling the plow.

Price, $40, more or less, according to style.

Geo. Wharton, of Jerseyville, Ill., manufacturer.

Few farmers are aware that in feeding turnips they thus more effectually rot their manure, the pectic acid of the turnip having an effect upon straw, which water alone will not dissolve. To mix turnips with straw when fed, has a still greater, a more direct effect.

A COATING FOR CHEESE.—X. A. Willard recommends a coating of gum shellac to be put on cheese when ready for market. Dissolve the gum, and apply with a brush. It is a harmless application.

A BROTHERLY UNDERTAKING.—Mr. Wentworth, of Chicago, purchased at the late Ill. State Fair, one-half of the celebrated imported bull, King Alfred (14760), bred by Jonas Webb, of Babraham, England. He was selected by James N. Brown, in person, who has held him above all price, until he sold one-half to Mr. W., on condition that neither is to use him upon other cows than his own, and neither is to ever part with his interest, and he is to be kept every other year upon the farm of each.

A little sand
Improves clay land.

AGRICULTURAL ITEMS.

Spread manure over your wheat fields after the harrow has left, and your crop will seldom fail of being a good one. You thus bring the manure in contact with the roots, especially if you harrow in the manure. But when left on the top it will keep the ground moister. It is however generally harrowed in.

The Farmer has golden moments in winter, especially the long winter evenings. Then, among other studies, he should inform himself on the various branches that relate to farming—not to agricultural papers alone. He must read the books that form the basis of farming: then the agricultural papers come in most beautifully, for then he can the better understand them.

Some people have springs on their hillsides, which they may direct often so as to water their dry hill. This is done sometimes where it is practicable. But people are apt not to think of it—"they never thought of such a thing."

Sometimes a little effort will green over a hill that has been little better than a barren, and will repay labor a hundred-fold. We have all traced the effects of springs along hills—a green path always. This only wants to be directed. We thus know several lots that afford grass equal to the best grass-producing flats.

Turnip Taste in Milk.—An exchange paper says a little saltpetre dissolved and put in the milk, will remove the taste of turnips and buttercups.

A hog will eat grass readily when cut and carried to him with the dew on. Of course, it must be cut when short and tender. A hog will thrive on such feed.

It is not the knowledge so much as the effort that we want. You may tell your readers the most important things; but they are very apt to neglect them, to put them off to some future day. To begin: that's the difficulty. We must, therefore, repeat many things (as editors): keep pounding the truths into the mind.

The amount of guano on the coast of Peru is estimated at the value of $230,000,000. Think of this, ye farmers of poor land!

Salt on Land.—It begins to be understood by those who have practiced it, that salt sown broad-cast at the rate of about two bushels to the acre, is a benefit. Especially is it good for wheat. Like lime it is lasting, and need not be repeated every year.

Country Fairs.—This institution in some parts of the country is becoming a holiday affair. In New England the people look forward to an agricultural exhibition with as much interest as to a Fourth of July entertainment. Does any one need to be told that great good is resulting from this? The fruits are there abundantly. Pleasure with profit are here combined. And it is this which makes success.—Get a man to love to do a thing, and he is sure to do it well. Make fairs entertaining, and they will soon be profitable.

Deep Fall Plowing.—Deep fall plowing may be done earlier than the ordinary shallow plowing. It covers the grass more effectually, putting it in so deep that the little warm weather which follows does not reach it, and hence it is not quickened into growth. There will also be more mellow soil on top, made still more mellow by the action of the frost and sun, as the soil is more thoroughly exposed.

Cure for Worms in the Head of Sheep.—Some thirty years ago there appeared a statement in Gov. Hill's *Monthly Visitor*, that worms in the head of sheep could be cured by simply taking whale oil, and with a feather put it up the nostrils two or three times. It should be done in the spring, or whenever the symptoms of the disease make their appearance. It is said by those who have tried it to be a sure remedy.

[Written for the Valley Farmer.]

A FEW USEFUL HINTS.

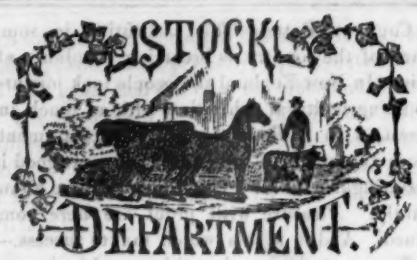
BY ONE WHO HAS HAD EXPERIENCE.

Home-made carpets should have heavier warp than is usual. It is the warp that always wears out first in a rag-carpet. Tried to our sorrow.

A Clean house disposes to cheerfulness; also to exactness; and exactness leads to neatness. Here then is a principle leading to a very desirable thing—a neat housekeeper. The man can, unsuspectingly, often direct these things or greatly aid them, and in a young housekeeper do much towards establishing neatness and other desirable qualities. The *principle* must be established to work from, else the work will be all mechanical, and therefore not lasting.

Awnings over windows are wonderful heat-dispellers. Besides, they temper the light most pleasantly. Especially in upper stories is this so. We are writing this by such a light—a strong sunlight subdued. But these awnings must be well secured, or the wind will take them down for you.

Sweet sleep is almost superior to day-life—especially when the dreams are sweet.



DEVON CATTLE.

Ed. Valley Farmer: Having noticed in some of the back numbers of your valuable journal that considerable space has been given to the consideration of the merits of Ayrshire and Alderney stock as milkers; I propose, with your permission, to say a few words in favor of the Devons.

I have refrained from writing on the subject heretofore, because, as a breeder of Devons, it would naturally be supposed by the reader that I was an interested, and therefore prejudiced observer.

But admitting such a conclusion, I shall gain but little by it, since my sales up to the present time have included almost the whole increase of my herd, ready for market, and I cannot by writing ever so much increase the age of my calves a single day.

The Devon cow, according to my experience and understanding of what is necessary, is *the cow for use in a family*. And now what is necessary? Both *quantity* and *quality*; but the latter an absolute, and the former a qualified essential. Whilst quantity is an absolute essential to the milking qualities of a cow for dairy use where the milk is sold, it is not where the cow is kept for the family—a limited quantity of milk only can be used in a family, but that quantity should be rich.

An animal which will furnish from eight to twelve quarts of milk per day, from which sufficient cream can be obtained to make butter enough for the family, is the one required—and such eminently is the Devon.

Those of your readers who keep cows and use milk freely on the table, will understand what I mean, by remembering the sizes of their pitchers and the number of times they appear daily, when I assert, that but a very small amount of milk is consumed in the majority of families, and that *butter* rather than milk is the object in keeping a cow. Now, are these qualities combined in the Devon cow? I answer, Yes.

Whilst they do not, as milkers, yield a large quantity, yet they will give from two to four gallons per day, of a very superior quality. So that *milk and butter enough are furnished* for all the ordinary demands of a medium-sized family.

Since last March, I have been milking but two Devon cows, and notwithstanding the fact, that through the summer they ran in a very poor pasture, the two afforded us a sufficient quantity of both milk and butter for the use of a family of ten persons, three times a day.

As to appearance, docility and feeding qualities, I think they have no superiors. The cows are small in size, beautiful in form, of a uniform color, either dark or light red, and as gentle and quiet in disposition as a pet lamb. When not giving milk, the cows will readily take on fat, consuming but a small quantity of food on account of their small size; making beef fine-grained, tender and marbled, much prized in the market.

If what I have stated be true, and I do not fear that it will be disputed by any one acquainted with the stock, it must be admitted that the Devon cow possesses advantages sufficient to recommend it over any other breed for family use.

These are the claims which I lay for the Devons. I do not think I have over-estimated their merits, and if I am correct in my judgment of what is essential to constitute a first-class cow for family use, I do not hesitate in affirming my preference for these beautiful little red animals.

Bridgeton, Oct. 1863. W. W. Henderson.

Ashes for Hogs.—We presume we will have to endorse Alderman Mechi's advice in feeding ashes to pigs. He does it, and says it is necessary to the growth of their bones, which is undoubtedly true. We feed ashes and lime to hens that they may have eggs and bones, why not to pigs. But if to pigs and poultry, why not to other animals? Because the food of different animals varies. Where food contains the ingredients already, there is no need in applying bone-forming matter. We hope the Englishman has made a true discovery.

Investing Grain in Cattle.—Cattle are an excellent store-house for your grain; the grain holds the store-house, and the store-house the grain from spoiling. "Ah! but my grain is lost if I feed it to winter-stock." That is the common opinion, and the common error. There is this advantage in a fat creature, if you stunt it, it will lose flesh, whereas if you stunt a lean animal to the same extent that will impoverish a fat one, it will die. The carcasses in the spring are evidences of this. But a fat creature's carcass is not one of them.

INFERIOR STOCK IN THE WEST.

N. J. Colman, Esq.,—*Dear Sir:* Will you please inform your readers of the cause of so much inferior stock in the West—particularly cattle. Having been raised in the Empire State, and seen good cattle all my life, I am led to ask you the cause of the difference in the size of Western and Eastern stock.

Young Farmer.

In reply to our correspondent, we will say the chief cause of the difference is the care and attention bestowed upon the stock. In the Northern and Eastern States, cattle cannot pick half their living during winter as they are compelled to do too often in the West, or starve. There a bountiful supply of food is provided for all kinds of stock. Snow lies upon the ground all winter, and they must be fed regularly or starve.

They are also provided with comfortable stables and barns. A stall is provided for each head of cattle and horses, and good warm beds of straw are given them. Instead of suffering, cattle are growing and thriving all winter. The farmers there find it to their interest not to let their stock get poor during winter, as it takes all summer to get in good condition again. Being thus comfortably provided for, they grow large, and surpass in size and quality our Western stock.

In the West, generally speaking, a different system is pursued. Barns and stables are too seldom provided for stock. The principal shelter is the heavens, and the clouds are known to be quite leaky. For wind-breaks a worm fence must answer. Instead of a dry, warm stable floor to stand upon, they must stand in mud and water knee or half knee deep. Good hay even, when stock is thus exposed to the inclemency of the winter, is a rare commodity. Generally corn-stalks, standing in the field where they grew and bleached by rain and frost, are the only food, and much stock is not provided for as well as this.

It could not be expected that stock thus treated, would become as large and fine, as if well fed and comfortably sheltered. Such treatment must check their growth, and is the cause of the scrubs we everywhere see around us. There are exceptions to such treatment here, we know; but they are rare. Sometimes sheds are provided; but then a few cattle that rule keep the others out, and mud prevails alarmingly under these sheds. Straw is burned in the field where threshed, as it is too much labor to haul it for bedding for the stock. The manure that it would make is not wanted.

Now we ask our candid readers, if we have painted the picture in too high colors? Does not their observation sustain what we have said about the neglect of stock in winter in the West? And is there not a radical reform needed? Can large, fine and thrifty cattle be expected, if thus cared for?

Experience of a Practical Wool Grower.

On January 1st, 1860, I purchased and had driven to my barn, twenty fine-wooled old ewes, taken from one of the best flocks in the county, and paid for the same forty dollars. These twenty had been the good sheep in their day, in a flock of eighty. My friends told me they would rejuvenate, as it were, upon my place. I had no sheep, no knowledge of sheep, no practice intending them, and hence tried the advice of every one in managing them. A first-rate full-blooded Spanish merino buck had been with these sheep.

The first season lost 2 sheep, raised 12 good lambs, and took 3½ lbs. clean wool average per head from my sheep. Used one of the best bucks the fall of 1860.

Second season—lost 2 more ewes, raised 16 nice lambs, sheared upon an average 4 lbs. per head. Fall of 1861, used an ordinary buck. Wintered 15 of my old sheep, and each raised a lamb.

My old sheep had really recruited. Their fleeces increased yearly, and upon the third clipping season averaged 4½ lbs.; yearlings and 2 year olds, 6 lbs. Sold my lambs fall of 1862 for a high price. My sheep came to the barn in Nov. in a first-rate condition; the old sheep looked three years younger than when I got them.

Pleased with my success, I had learned something of sheep and the way to tend them. Bought ten more old sheep from the same flock. Used in Nov. 1862, a yearling buck of my own purchase, selected for his many and promising qualities—a full blooded Spanish Merino. His first fleece of 13 months age, weighed 16 lbs. nice wool. Spring of 1863 raised 30 very nice lambs. Those from my young sheep are second to none. The fourth clip of these old sheep and their offspring averaged 5 3-5 lbs. nice clean white wool per head. Of these 22 two and three year old sheep averaged eight lbs. per head. My buck sheared 22¼ lbs. one year's growth. Live weight before shearing, 153 lbs. Sold 8 fat wethers just after shearing, whose average live weight was 85 lbs. Reckoned in the last clip was the fleece of the first

lamb of my buck dropped from a small yearling cosset Nov. 25th, 1862, which fleece weighed 3¼ lbs. I now have lambs after that buck, which sheep men have urged me to sell to them for ten dollars per head, and two-year old ewes for double that sum.

During this three years' experience, I have satisfactorily learned that there is a profound science in sheep raising and wool growing. This science has both its theory and practice, which requires thorough study and careful observation.

To young men entering upon the sheep business, I offer the following practical observations:

1. Begin with a few common ewes, and improve by using the best bucks.

2. Keep no more sheep than you can keep well the year round.

3. Tend them carefully, thus losses other than by accident will be avoided.—[*Cor. Stock Jour.*

DISEASES OF THE HORSE.

The following extracts are taken from Dr. Jenning's work on "The Horse and his Diseases:"

Sprung or Broken Knees.—The trouble does not always result from an injury of the leg, or strain of the tendons; it is more often found in horses that have bad corns in the feet, or troubled with navicular disease, than in any other. The animal raising his heels to prevent pressure upon the tender parts, bends the knee, which bending becomes finally, from the altered position of the limb, a permanent deformity.—Horses with sprung knees are unsafe for saddle purposes, owing to their consequent liability to stumble.

Respecting the treatment, it may be said that six out of every ten sprung-kneed horses will be found to have corns. If these be of recent growth, there is a fair prospect of straightening the limbs by removing the corns as directed under the head of that disease; by the removal of these the heels are brought to the ground, and the limb becomes straight. Under any other circumstances all treatment proves useless.

Breaking Down.—This accident occurs in running, jumping, racing, etc. It is sometimes called a strain of the back sinews, and lets the animal down upon the fetlock, in consequence of a rupture of the ligament of the pastern.—Horses meeting with this accident are of little value ever after, as they always remain weak in the fetlock. Unless the animal is quite young and valuable, the treatment would cost more than the animal's value. The French treat these cases very successfully by the application of instruments which keep the limb in its proper position until the parts have again healed and become strong. This is the only course to be pursued with any possible chance of a successful termination of the case.

Strains in the Knees.—Strains of this joint occur in young horses while being broken into harness more often probably than at any other period of the animal's life. This results from the tenderness of the parts at that time, not one in twenty having them arrived at maturity. These strains often prove troublesome to manage, and occasionally leave a stiff knee as the result.

Treatment—Bleeding from the plantar or plate vein; warm fomentation to the part; when the inflammation is reduced, apply once a day, for several days, the following ointment: iodine ointment, one ounce; blue, or mercurial ointment, half an ounce; mix well together.

Strain of the Hip Joint.—This occurs in falling, slipping, getting up, etc. The symptoms are a dragging motion of the limb; the lameness passing off after the animal gets warmed up, and returning upon his becoming again cool, the horse being then even more stiff and lame than before leaving the stable.

For treatment, apply cold water; a purging ball and rest are all that are requisite to effect a cure. Careful usage for some time after will be very necessary.

Shoulder Strain.—This, which is of rare occurrence, arises from severe blows, or concussions; slipping so as to throw the legs apart forcibly; falling in the shafts of a heavily laden cart, etc. The symptoms are usually well marked; the horse is quite lame, both when walking and trotting; the leg drags with the toes on the ground, having an outward or circular motion.

Local bleeding is generally useful by way of treatment; three or four quarts may be taken from the plate vein, which runs inside of the leg. If, however, the animal is in a debilitated condition, bleeding should not be practiced. Foment the shoulder well with hot water frequently, a seton will often be found beneficial. After fomenting two or three days, use the following liniment: Laudanum, one ounce; spirits of camphor, one ounce; tincture of myrrh, one ounce; castile soap, one ounce; alcohol, one pint. Or, sweet oil, one pint; spirits of hartshorn, three ounces; shake well together.

BENEFIT FROM TWO COWS.

Ed. Valley Farmer: My brother had two cows, which he selected from two dairies. They were "good cows," not much more. But he took care of them when he got them. They were good size; rather good form—one red, the other brown—native breed, as far as I know. He kept them on five acres of pasture, with several calves, and a heifer or two, and a horse. But he might have kept another cow, as the grass shot up and headed, and was afterwards mowed for hay. The soil was a cold, sandy clay, inclining to the north. Better grass, nor so good I never saw. Hence, there was any amount of feed.

In winter great attention was paid to his cows—warm stables, kept clean. There was running water and salt constantly at hand. No grain was fed during the winter, hay only. After calving, roots and some grain (corn and buckwheat) were fed, but not much corn. The cows were milked to within a month or six weeks of calving.

My brother's family is composed of himself, wife and adopted boy. He has his usual share of "company," and yet he sold, for several years in succession, up to the loss of one of his cows, two hundred and a few odd dollars' worth of butter a year, averaging about 21 cents a pound. Besides this he used all the butter and milk that the family needed—the usual amount—and fatted 400 pounds of pork. My brother lays the success of his cows mainly to their treatment. He says they cost him much more than cows similarly treated that make less butter, the amount of milk and butter being in ratio to the expense of keeping. Next comes in the quality of the cow. He says there is less gain in keeping first-rate cows than is generally supposed. Still the investment is a good speculation he holds, better than to purchase a poor cow.

The soil is kept in good pasture for years. He top-dresses with plaster and ashes to a small extent. He does not feed short in the fall.—There is always some grass coming to maturity, which (he thinks) re-seeds the ground. At least a new verdure is seen starting each spring. The land used to be wet. It is dried by ditching. Timothy and Red-top are the grasses, mixed with White and Red Clover.

The soil is excellent for pasture, the grass thick, fine and tender; the cows are excellent; they are excellently kept during the winter; and the butter is excellently made, bringing an excellent price. All these combined are the cause of the success. The best that one of the cows did, was 15 pounds of butter a week, in June. This cow was a trifle the best. The same cows did not do near so well when in the dairy.

Danubé, N. Y. G.

To Cure Sheep from Jumping.—A correspondent of the *Ohio Farmer* gives the following curious account of the method adopted by him to prevent his sheep from jumping the fences of his pasture: "I want to tell you about my jumping sheep, and how I broke them. I got them in a pen built sufficiently high to hold them; I then caught the ringleaders one at a time, and made a small hole in each ear.—I then took a cord or string and run through the holes in the ears, then drew the ears together close enough to keep them from working the ears, I then let them out and they are as quiet as any sheep."

Cows Killed by Sorghum.—A friend from Morrow county relates to us a circumstance of the fatal effects of allowing cows to feed upon green sorghum. Several cows upon the farm of a man near Cardington, broke into a field of sorghum in the afternoon, and after feeding a short time, two of them were found down, and soon died. The next day others broke in, and were found in their death struggles, their eyes wild, and exhibiting symptoms of great pain. All but one died, which one was barely saved by drenching with soft soap; she had not fed to any great extent, but was very much stiffened from the effects of the feed. One of the cows which died was previously tapped to let off the gas, but this did not avail to save her life. On opening the animals after death, the contents of the manifolds were found baked and hard, from the fever gotten up in the stomach. The quantity of sorghum eaten was not extraordinary, but its uniformly fatal action in these cases was remarkable.

Prevention of Cribbing in Horses.—A correspondent of the *Agriculturist* says: I found myself cheated to the amount of $50 by the purchase of a horse sold as "sound," but which proved to be an inveterate cribber. Various remedies were recommended and tried without success. Finally I found a preventive, if not a cure. I have arranged the stall so as to leave nothing against which he can press his teeth. He is fed from a low box which is pushed into the stall from a passage-way, and the box is withdrawn when not in use. It is said that a horse cannot crib with head down. The opening for air and light is placed too high for him to reach it to crib against its sides. Since adopting the above arrangement, the horse has improved in condition and spirit, and his value is also much increased.

HORTICULTURAL.

Manuring the Isabella Grape.

Ed. Valley Farmer: Mr. Daniel Shall, of Starkville, N.Y., has an Isabella grape vine which he treated with manure from the privy, and no pruning, or little, for the first few years. Two years ago he dug round his vine to the depth of a foot, about nine inches from the stalk, and dumped in a wheel-barrow full of the contents of the privy; then covered with ground. Contrary to the expectations of some (the writer included), the vine bore the finest crop of grapes in the community. It was worth a visit of miles to see the large, handsome clusters, and how many of them. There was no pruning done. The foliage also was unmatched. This year the same growth is repeated: leaves and grapes absolutely unmatched in our experience. No pruning. Besides the manure that was applied, the soil is naturally very rich: a deep, black, sandy loam.

A neighbor's vine (Isabella), a few rods distant from this, also did well. We believe there was no manure used. The soil, however, is of the best quality. The grapes and foliage are not so large, but surpass the Isabella generally.

Another vine (Isabella) a few miles distant, on similar soil, was treated in the usual mode of close pruning, &c. The result is, fine clusters, but less grapes, owing to the less extent of the vine in consequence of pruning. The first vine, mentioned above, takes the palm of the two combined. W.

Preserving Early Fruit.—Where there is a propensity to rot in apples, or in most fruit, as is the case much with early sorts; pick before fully ripe, when yet solid and sound. Treat as much as possible as winter apples are treated, by putting in a cool, somewhat dry place, a little drier than would do for winter fruit. In this way we have gradually ripened fruit, and kept it long beyond the time usually allotted, with a positive improvement in flavor, &c.

Glass for Grapes.

The *Country Gentleman* reports this: "In New Jersey, I saw a vineyard of 10 acres, chiefly Isabella; a failure from rot. The leaves were greatly injured by mildew. The soil, a sandy loam (more sand than loam), on a somewhat adhesive sub-soil. The location flat and exposed. An experiment had been tried in covering a small portion with a glass roof, the sides completely open. Under this the foliage was perfect, the fruit good."

The same writer says of another vineyard:—"His main planting is on south-east slopes; his crops good. I noticed he allowed his vines to run without much pinching of the young wood, even allowing them to festoon from trellis to trellis. The one great trouble with all, seemed to be getting trellises high enough for the vines to extend and ramify. The low, dwarf mode adopted in Europe will not suit our American grapes; they must have room."

The Experimental Garden at Washington.

A visit to the experimental garden in Four and a half street, last week, interested us much, especially as Mr. William Saunders, under whose judicious and scientific care it has been placed, was kind enough to accompany us in our explorations amd answer any questions we proposed to him. When it is remembered that but a short while ago the site of this fine garden was only a worthless swamp—that, in point of fact, the garden is all "made ground," having been filled up with rubbish, and only topped with earth, the institutian cannot fail to be regarded as a great success. The garden is now in better order than it has ever been, for Mr. Saunders' energetic and conscientious management is beginning to tell upon it. Many needless walks and merely ornamental beds have been dispensed with, and the room thus wasted has been turned to good account. Nevertheless, the garden is still rather ornamental than useful, at least to the degree which Mr. Commissioner Newton and Mr. Saunders desire it to be. It contains, however, an immense number of fine grape vines of countless varieties; large beds of strawberries, raised from seed of the very best kind, and a variety of other fruits, as well as experimental beds of cereals, potatoes, &c., with a remarkably healthy collection of green-house and other plants and shrubs. But what really is needed, and for which we trust Congress will provide at an early day, is an experimental farm, on which the value of all new importations of seeds, roots, fruits, &c., can be

properly tested for a year or two before their distribution. The Agricultural Bureau can never have fair play until it has such a field for the conducting of its experiments. The site of such a farm ought, of course, to be within very convenient reach of the city, that persons from the country visiting Washington may be able to get to it and obtain the information the director would be able to impart. The Commissioner of Agriculture is constantly receiving cereals and other valuable growths from abroad, which, if they could be thoroughly tested under his own observation, might be made of incalculable value to the country. But the present garden is far too limited for such operations, nor is it favorably located. No one can be more solicitous than Mr. Saunders to benefit as well as gratify visitors and the country, but the scale is too small for the full gatification of this wish. Let us have an experimental farm, and the whole country will be immeasurably and permanently the gainer.—*Ex.*

Making Grape Wine.

A thing that is so much done, and yet so little understood by the masses of the people. Here is a simple recipe: Let your grapes get *thoroughly ripe*. Reject all that are imperfect or unripe. Take only such as you would pick off to eat. Mash slightly, and let stand a day or two; then draw off the juice. Keep in a cool ventilated place, at about 40° temperature. All grapes will not make wine. Few will make it alone. The Concord is one of these. A mixture of grapes is generally resorted to. The Isabella and Catawba are used together. The Isabella, however, cannot be relied on for large cultivation. The Southern sun is apt to hurt its leaves, and the Northern climate to interfere with its ripening. The Concord is, no doubt, the most successful grape, both for wine and general use. Each cultivator should have the Concord as a stand-by. The inexperienced should always remember that wine is never good till it is a few years old. At a year old it is not wine, that is, it hasn't developed itself, worked itself clear; for the wine in its pure state is in the grape as soon as ripe, when yet on the vine. It needs a process to get at it in a pure state; and that process embraces the slow operation of fermentation at a low temperature. Years are required—and still it is not pure. It takes many years to fully extricate itself; and just the time when it is pure, it is hard to tell. It is like gold in this respect. O.R.

Flies never fight: nature forgot to arm them.

Canned Fruit for Shipping.

In putting up fruit, vegetables, or other food for shipping any considerable distance, it is very important that it should be soldered perfectly tight, instead of being closed with wax. We are told by those who have had experience in the army, that 50 per cent. of such luxuries that are sent to the army with wax sealing, arrive in a worthless condition, for the reason that the wax often becomes cracked during the carriage and admits air to the cane.—Those who put up or buy such articles for the army or hospital use, should remember this fact. For family use, wax sealing will do.

Report on New Early Peaches.

Read Before the Alton Horticultural Society, Oct. 3, 1863.

The committee appointed August 1st to collec facts in regard to new varieties of early peaches, submits the following report:

TROTH'S EARLY RED.

So far as I can ascertain it is first noticed in Kenrick's New American Orchardist, in the eighth edition of which (edited in 1844 and published in 1848) we find the following: "Troth's Early Rare Ripe, new, and from the vicinity of Philadelphia; of good size—red next the sun. As early as the Early Anne, and very superior to that variety—very productive."

Hooper in his Western Fruit Book, 1857, noticed it as follows: "Troth's Early Red—very fine. Excellently adapted for the locality of Cincinnati."—F. G. Carey.

Elliott in his Western Fruit Book, 1860, gives the most complete description: "Troth's Early Red, American. Flowers small; glands globose; fruit medium, roundish, and bright red in sun; flesh juicy, sweet. A new variety, very productive, and valued highly as an early market sort. Ripening about the time of Early Tillotson."

It is several times noticed in the fruit reports in the Patent Office Reports in 1854, as cultivated in Missouri, in 1856 in Delaware, and in 1858 in Pennsylvania.

It is advertised by many nurserymen such as Stewart & Son, of Quincy, Arthur Bryant & Son, of Princeton, N. J. Colman, of St. Louis, Isaac Pullen, Hightstown, N. J., Bateham, Hanford & Co., Columbus, O., and F. K. Phœnix, Bloomington.

Its earliest cultivation in this State, so far as I know, was by Luke Townsend, Collinsville, in this county. Mr. Townsend informed me in the fall of 1861 that he procured this with other varieties, from Delaware, if I remember rightly, many years previous and had found it a very choice and profitable peach for the St. Louis market. Its common period of ripening he said was from the 20th to the 25th of July, in his orchard on the bluff near Collinsville in a sunny exposure. He affirmed that he had them ripe one year on the 11th and another on the 15th of July. From Mr. Townsend's orchard and nursery the fruit has been disseminated to a considerable extent in his neighborhood, and is cultivated among others by the Messrs. Barnsback & Kinder and Mr. Cook, of Ridge Prairie, all of whom appear to hold it in high esteem.

Some seven or eight years since, Messrs. Hadley and Isaac Harkleroad of this county, set out 650 trees of this variety, in a peach orchard planted by them at Makanda Station, on the Illinois Central railroad, near the south line of Jackson county. Mr. Hadley, at the meeting of the Missouri State Horticultural Society in January, 1862, gave the following opinion of the fruit. "It is the best early peach. This last season it commenced ripening on the 15th of July, in

Jackson county. Mr. Townsend, near Collinsville had them ripen on the 20th of July. Fine flavor and size; it is the best eating peach that we have that ripens early. I prefer it to the Tillotson or Harris' Early—it is earlier; it is the peach for the early market." Of a similar character is his testimony given a year later at a like meeting. "It is the first peach of the season, and there is no peach that competes with in market. Early Purple and Early Tillotson come a little later."

John A. Pettingill, of Bunker Hill, and one of our most intelligent nurserymen and fruit growers, gave a like testimony. "I have experimented with the Troth and the Tillotson, the Tillotson had not a good fruit upon the tree, and it is a week later than the Troth."

N. J. Colman pronounced it "the best early peach."

In the American Pomological Society's Report for 1862, this variety is recommended for the District of of Columbia, Pennsylvania and Illinois.

In the Horticulturist for August, 1862, A. Babcock, of Southern Illinois, says, "our most popular early market peach yet tested is Troth's Early Red. This variety ripened here, a few days earlier than Serrate Early York."

C. B. Pelton, of Makanda, in his premium essay, places the relative time of ripening at that point, in 1862, as follows;

Early Tillotson, July 14; Troth's Early, July 14; Serrate Early York, July 18; Cole's Early, July 22; Crawford's Early, July 25; Large Early York July, 25.

John A. Cook, of Ridge Prairie, in this county, brought specimens into the city on the 4th of Aug. '63, and stated that they were ready for shipping on the 30th of July. These were a very fair bright colored red peach, of medium size, red at the stone and of dry flesh. If I remember rightly Mr. Cook placed their time of ripening a few days earlier than the Early Tillotson. Mr. Hadley, Mr. Cook informed me, commenced picking his peaches at Makanda on the 13th. Mr. Cook procured his trees of Mr. Townsend, and I presume they are genuine. The peach he had resembles the one presented here as Harris' Early Red more nearly than any other, and may be identical. A peach grown by Geo. Booth and Jon. Huggins, under the name of Cole's Early, also resembles it. The testimony collected would seem to show that Troth's Early is the best, and in some localities, the earliest market variety.

HALE'S EARLY.

Is described in the last Catalogue of the American Pomological Society as a free, white-fleshed and very early peach. In the catalogue of Bateham, Hanford & Co., of Columbus, as medium size and greenish-white color, with red cheek. In the trade catalogue of E. Y. Teas, of Richmond, Indiana, as ripening from ten days to two weeks earlier than the Serrate Early York.

In the February number of the Horticulturist, for 1863, A. G. Hanford, of Columbus, gives some account of this fruit and its origin. The July number has a communication on the same subject, from Edward Taylor, of Cleveland, Ohio. These gentlemen agree in tracing its origin to or near Mr. Hale, a nurseryman, of Summit county, Ohio, some 25 miles south of Cleveland. It was sent out both by Mr. Hale and the Columbus Nursery in 1859. Mr. Taylor finds it a good grower, and an early bearer, often bearing the second year. It ripens seven to ten days earlier than the Serrate Early York, says Mr. Hanford; ten days earlier than the Serrate Early York, and sixteen days earlier than the Large Early York, says Mr. Taylor. It is said to be healthy, productive of fair fruit, and of good color.

The August number of the Horticulturist contains a picture of the fruit, a description, and the experience of Isaac Pullen, of Hightstown, New Jersey—a valuable testimony.

The editor's description is: "Size medium; form round, depressed at the top, with deep suture extending around half the fruit; skin greenish-yellow, with a deep crimson cheek; flesh white, juicy, sweet, and well flavored; stone small; glands small, globose."

Mr. Pullen says: "It is a new peach, and ripens from six to ten days before the Troth's Early Red, or the Early York (Serrate), the two latter peaches being the earliest known for orchard culture."

These facts would seem to establish the time of ripening as a few days earlier than that of any other variety. Its value as a market peach in other respects remains to be tested, but 5 or 10 days in advance of the peach season will be an advantage that none will wish to lose.

I purchased last spring 25 trees of this variety one year old, that were already full of blossom buds. They are growing tolerably well considering their condition when I received them and the lateness of planting. I hope to fruit them next year. The glands on leaves that I have examined are not very distinct, but are apparently globose.

GALBRAITH'S SEEDLING.

Mr. Babcock as above recommends this peach originated by Mr. Galbraith, of Mount Vernon, Jefferson county, and describes it as larger than Troth's Early, ripening at the same time, and as not quite so good a bearer. Mr. Phœnix advertises it in his last descriptive catalogue as "new, large, red and white, very early and good, promising."

F. K. Phœnix, in the Rural New Yorker of Sept. 26th, gives the following notes from a reliable correspondent in St. Joseph, Michigan:

"The Hale's Early peach is considered a very great acquisition by growers in this vicinity, but it will be still more valuable to Southern growers, because no matter how early here, it will be weeks behind Central and Southern Illinois.

"The Hale's Early is rather above medium size, very handsomely colored, white flesh, free stone. Flavor good, though not quite equal to Troth's Early and Gross Mignonne. The tree is a very vigorous grower, producing extraordinary large crops and bearing very young.

"I know of trees in this vicinity planted 3 years ago last spring, that have produced this season five or six baskets to the tree, and that from a large number of trees. I think it full ten days earlier than the Large Early York."

CHEAP CIDER VINEGAR.—Take the water in which dried apples are washed and soaked, and after carefully straining, put in a vessel; add a pound of sugar, or its equivalent in molasses.—Put in a piece of brown paper and set where warm. In a few weeks you will have good cider vinegar. More sugar added, will improve it. The vinegar will also be better, the more concentrated the cider is. The strongest vinegar is made from boiled cider.

Missouri State Horticultural Society.

The fifth Annual Meeting of this flourishing Society will commence on Tuesday, the 12th day of January next, and continue through the week. Arrangements have been made for valuable Essays and Addresses on various subjects. A programme of proceedings will be made about the middle of December, which will be sent to our Horticultural friends. We hope to see a large attendance and an interesting meeting.

NOTES ON GRAPES.

EDITOR VALLEY FARMER: Having just returned from an Eastern trip, where I have seen a great many varieties of grapes, I think a few notes which I made of those which I thought really desirable, might be of interest to your readers. I have noted only those which I thought really, in some particular or other, superior to those we have already, as I think it useless to swell our too numerous list of varieties, by adding more which are not really better than any of the older varieties. I will here add, that I was more and more convinced of the superiority of our climate for grape culture. All the varieties I tasted there, which we also grow here, I found much sweeter here, with less pulp and better in every respect; even the famed Delaware, although it seems to be more healthy there than here, is better in flavor and much sweeter here; and their Concords do not taste like the same grape at all, being it is true, a fine looking grape, but acid and with a very tough pulp, not at all like our sweet Concords, with the pulp nearly dissolved. The difference is full as marked in the Herbemont, which I would not plant at all if I lived in New York or Pennsylvania, while here it is one of the most delicious grapes we have. This shows plainly that we should try every grape ourselves, before we plant largely of it, if it is ever so much lauded there. Let us stand on our own feet, see with our own eyes, and we will be on safe ground.

DEVEREAUX,

Seen at the public gardens, Washington City, 1st of October. Bunch, over a foot long, large, rather loose, shouldered; berry resembling Herbemont; rather small, or below medium; black; juicy; little pulp; sweet, rich, and vinous; quality very good; a strong grower, and very productive. This grape is of Southern origin, and belongs evidently to the same class as Herbemont, Lenoir, Cunningham and others.

SHEEP TAILS,

An ugly name, but a very promising grape for wine. Bunch, large, loose, shouldered; over a foot long; berry rather small, black, pulpy; resembling Norton's Virginia in flavor and texture; will, I think, make a fine red wine; seems to be an abundant bearer; vine a robust grower and healthy. Seen at same place and same day.

EL PASO.

Same place. Bunch, large, loose, shouldered; berry medium, round, size of Catawba, without pulp; juicy, sweet and good; purple; seems to be a good bearer, but subject to rot; has the character of a foreign vine.

ADIRONDAC.

Seen at the grape exhibition, New York, October 3, exhibited by John W. Bailey. Bunch, large, compact, not shouldered; berry large, oblong, black, somewhat transparent; without pulp; juicy and vinous; very good; the nearest approach to a foreign grape I have yet found in a native; said to be very early, but not more than ripe when I saw it; it was grown, however, in the extreme northern part of the State.

IONA.

A new seedling of Dr. Grant. Seen at the exhibition, and also at Charles Downing's garden, Newburg, New York. Bunch, large, long, somewhat shouldered, loose; berry above medium, of a beautiful wine color; slightly oblong; transparent, fleshy, but not pulpy; vinous and sweet; sprightly flavor; quality best; said to ripen with Delaware.

MARTHA.

A seedling of the Concord, originated by that zealous pomologist, Samuel Miller, Calmdale, Lebanon Co., Pa, and certainly a grape of great promise.—Bunch medium, rather loose, but will no doubt get larger when the vine gets older; shouldered; berry large, round, pale yellow; somewhat pulpy; sweet, juicy, very slightly foxy; quality very good. Most of the berries contain only a single seed; vine strong grower, healthy, and hardy; promises to be very productive.

CONCORD SEEDLING, NO. 4.

Same origin; has not yet been named. Resembles the old Concord in bunch and berry; black, with blue bloom; almost without pulp; much sweeter than the original; seems to be very productive; strong grower, healthy. A decided improvement on the old variety.

ROGER'S HYBRID, NO. 1.

The only one of Roger's Hybrids, of all I have tested, which I really like. Bunch medium, loose, shouldered; berry very large, oblong, pale red, skin thin, pulp tender, few seeds, separating freely from the pulp; sweet, vinous, juicy, with a peculiar agreeable aroma; closely resembling foreign grapes; quality very good, if not best; good grower and healthy.

MAXATAWNEY.

Bunch medium, long, compact, not shouldered; berry above medium, oblong, pale yellow, with a slight amber tint on one side; pulp tender, sweet, and sprightly; few seeds, fine aroma, quality best; vine seems to be healthy and productive, the most promising whi e grape which has yet been sufficiently tried.

CHEVELING.

Bunch long, loose, shouldered; berry full medium, nearly round, black, with blue bloom; grape tender; dark juice, sweet, very good; said to ripen before Hartford Prolific, of better quality; hardy, healthy and productive; promises to make a good dark wine.

GEORGE HUSMANN.

Illinois Horticultural Society.

The Illinois State Horticultural Society will hold its eighth Annual Winter Meeting, at Mercantile Hall, in the city of Alton, on Tuesday, Wednesday, Thursday and Friday, December 15th, 16th, 17th and 18th, 1863.

The various State and local Horticultural Societies of the country are cordially invited to send delegates; and all persons interested in Horticulture are urgently requested to attend. Specimens of fruits, flowers, plants, vegetables, wines, seeds and other products, are solicited.

The Ohio & Mississippi railroad company will grant return passes to "members holding a statement from an agent that they have paid full fare from such a station to St. Louis, and at the same time presenting with it, at the Superintendent's office in St. Louis, a certificate of membership." The Chicago & Alton railroad company will pass returning members to the 19th of December, who have paid full fare, on the certificate of the Corresponding Secretary. The Terre Haute & Alton railroad company "do not commute fares in favor of meetings of any societies." The Illinois Central railroad company reply that it is contrary to their regulations to make any concessions in the rate of fare for passengers to any but the State and National fairs.

Persons arriving before 10 o'clock on Tuesday, are requested to report at the Corresponding Secretary's office, over the Alton Bank, after that time at the hall of meeting, where a committee of reception, appointed by the Alton Horticultural Society, will assign them to quarters provided by the hospitality of citizens.

PAPERS TO BE READ BEFORE THE SOCIETY.

President's Annual Address.
Treasurer's Report.
Secretary's Report.
Essay on the Apple, by F. K. Phœnix, Bloomington.
Essay on the Pear, by Robert Douglass, Waukegan.
Experience of Pear Blight, by B. F. Long, Alton.
Essay on the Peach, Nectarine and Apricot, by H. S. Hull, Alton.

Essay on the Grape, by John A. Warder, Cincinnati.

Essay on American Wines, by Geo. Husmann, Hermann.

Essay on Small Fruits, by N. J. Colman St. Louis.

Essay on Vegetable Gardening, by H. Schroeder, Bloomington.

Essay on Flower Gardening, by Chas. Kennicot, Centralia.

Essay on Cultivation of Native Forest Trees, by O. B. Galusha, Lisbon.

Essay on Green-House Culture, by Edgar Sanders, Chicago.

Essay on Nut-Bearing Trees, by Wm. Muir, Fox Creek, Mo.

Eulogy of the late John A. Kennicott, by Arthur Bryant, Sr., Princeton.

Biography of Dr. Kennicott, by C. D. Bragdon, Chicago.

In addition to the essays by the gentlemen above named—who have all consented to serve—others are expected from persons who have not yet made known their intention to furnish contributions.

In the discussion of Fruits, &c., the following order will be followed, so far as practicable, and it is recommended to the consideration of essayists:

1. Varieties—1, For profit; 2, For taste. 2. Propagation. 3. Selection and preparation of ground. 4. Planting. 5. Cultivation. 6. Pruning. 7. Diseases. 8. Gathering and marketing.

W. C. Flagg, Cor. Sec. G. W. Minier, Pres.

Alton, Nov. 15, 1863.

Indiana Horticultural Society.

Dear Sir; Indianapolis, Ind.

The third Annual Meeting of the Indiana Pomological Society will convene in this city on Tuesday, January 5th, 1864, and continue in session four days. A general invitation is extended to all persons who are in any way interested in fruit culture. It is hoped that all who can possibly do so, will bring with them samples of fruits and wines. An interesting meeting may be expected from the following programme. The persons announced as essayists, have all been written to and nearly all have answered favorably.

The reading of the Essays will be followed by discussions under each head. Geo. M. Beeler, Sec.

First Day.—Forenoon—Address, by the President, T. D. G. Nelson. Appointment of committees and miscellaneous business.

Afternoon—Essays on some subject connected with apples: Wm. H. Ragan, Fillmore, Putnam county; Jno. C. Shoemaker, Rome, Perry county. Essay on planting and training of orchards: Jno. W. Tenbrook, Rockville, Parke county.

Evening—Address before the Society, by Dr. Jno. A. Warder, of Cincinnati.

Second Day.—Forenoon—Essays on some subject connected with pears: Wm. H. Loomis, Indianapolis, and Dr. J. C. Helm, Muncie, Delaware county.

Afternoon—Essays on some subject connected with grapes: Dr. R. T. Brown, Indianapolis. The Rev. J. Knox, of Pittsburgh, Pa., will be present and address the Society on the same subject.

Evening—A general talk on wines, and wine grapes, wine making, &c.

Third Day.—Forenoon—Essays on some subject connected with peaches: Wm. A. Ragan, Clayton, Hendricks county, Rev. Alex. Sterrett, Evansville, Posey county, and Sylvester Johnson, Dublin, Wayne county.

Afternoon—Essays on some subject connected with cherries: J. J. Conley, Richmond, Wayne county, and B. H. Wright, Canton, Washington county.

Evening—Report of committees.

Fourth Day.—Forenoon—Essays on some subject connected with small fruits: Allen Loyd, Indianapolis, A. M. Purdy, South Bend, St. Jo. county, and G. Goldsmith, Indianapolis.

Afternoon—Miscellaneous business and adjournment.

Domestic Department.

To Free Molasses from its Sharp Taste.—Take twenty-four pounds of molasses, twenty-four of water, and six pounds of charcoal, coarsely pulverized; mix them in a kettle, and boil the whole over a wood fire. When the mixture has boiled half an hour, pour it into a flat vessel, in order that the charcoal may subside to the bottom; then pour off the liquid, and place it over the fire once more, that the superfluous water may evaporate, and the molasses brought to their former consistency. Twenty-four pounds of molasses will produce twenty-four pounds of sirup.

Apple Molasses.—Take new sweet cider, just from the press, made from sweet apples, and boil it down as thick as West India molasses. It should be boiled in brass and not burned, as that would injure the flavor. It will keep in the cellar, and is said to be as good, and for many purposes better than the West India molasses.

Beans.—The cheapest and most nutritious vegetable used for food is beans. Prof. Liebig says that pork and beans form a compound or substance peculiarly adapted to furnish all that is necessary to support life. A quart of beans and a half pound of pork will feed a small family for a day with good strengthening food. Four quarts of beans and two pounds of corned beef, boiled to rags in fifty quarts of water, will furnish a good meal for forty men.

Ginger Snaps.—Take two cups molasses, one cup lard, one tablespoonful ginger, one teaspoonful salt, two teaspoonfuls soda. Let these ingredients boil up once, and then add flour until stiff enough to roll out, and bake in a quick oven.

Substitute for Coffee.—To one quart of wheat bran add one teacupful of molasses with one of water, stir together, and dry in the shade, or in a stove; brown a dark color, and mix one-third coffee, which, if prepared right, makes an excellent beverage.

A Good Recipe for Vinegar.—Take forty gallons rain water, one gallon molasses, and four pounds acetic acid. It will be fit for use in a few days. Acetic acid costs twenty-five cents per pound. This is the recipe by which most of the cider vinegar is made, which is sold in the country stores.

Smoky Chimneys.—A correspondent of the "London Builder" gives the following cure for a great and common evil:

"A smoky chimney and a scolding wife are two of the worst evils of domestic life, says an old proverb, and to obviate the first evil, ingenuity is ever racking its brain. Hence, Regent street and every part of the metropolis has its house tops bristling with pipes, and deformed by cowls of every conceivable variety. Now, I have built many chimneys, in all possible situations, and found one simple plan everywhere succeeded, the secret being only to construct the throat of the chimney, or the part just above the fire-place, so small that man or boy can barely pass through it. Immediately above, the chimney should be enlarged to double its width, like a purse, to the extent of about two feet in height, and then diminish again to the usual proportions. No chimney that I ever constructed thus, smoked."

Croup.—Dissolve half a teaspoonful of ipecac, in half a tea cup of warm water. Sweeten it, and give a half or a whole teaspoonful, according to the age, until vomiting is produced; then give it in smaller quantities, and less frequently. Wrap up the child to promote perspiration, bathe the throat with volatile liniment, or tobacco ointment. The above will give relief in a short time, if taken in season. Onion juice and molasses may be given to vomit, but there should be no delay. It is known by a peculiar whistling sound in the breathing, and if neglected at all, proves fatal.

[Written for the Valley Farmer.]

A WORD OF ADVICE.

Don't be in haste to get rich. Don't go along grasping small coin and large coin, heaping up mammon to worship. "Ye cannot serve two masters," and it is a dreadful thing for the human heart to hate the living God and cleave unto the gold that perisheth.

Spend a part of your time in laying up treasure which shall draw your affections upward.—In fertile places sow good seed, which shall spring up and bear fruit to everlasting life.

Is not the man to be pitied as well as condemned, who goes *driving* through this beautiful world, never halting at its pleasant places, or stopping at its cool fountains? His soul becomes covered with dust, and he thirsts only for the filthy stream called Lucre, whose tributaries rise from every place of vice, and flow through every channel of iniquity. Having eyes, he sees no beauty; and having ears, he hears no music; having a heart, he feels no sweet influence of love and sympathy: and man made in the image of God, becomes but the shadow of what man should be—a grasping, hardened creature!

Then, good farmer, don't be in haste to get rich. There are better things than silver and gold, more enduring and more to be desired.—Make your homes happy, and the minds of your children will turn back there as they voyage over the rough billows of life, as the ship seeks the calm haven. Then let your sons go out with tender memories in their hearts, to keep their feet from the snare, and turn them back from the pitfall. COUNTRY GIRL.

The excess of rain is not an excess of water; as the lack of rain (in a drouth) is not a lack of water. It is only a change in the distribution. When there is too much in one place, there is always a lack in another. So it is much with happiness and sorrow, smiles and tears. There is always a tendency towards an equilibrium.

TWO WAYS OF GETTING UP.

A STORY FOR CHILDREN.

"Come, my child, get up," said a mother, peeping into the room of her little daughter; "the robins are already at breakfast, and ours will be ready soon."

"Yes, mother, in a minute," said Sophy, petishly. Mother dressed, and was going down stairs, when she again said, "Come Sophy, jump up, little one."

"In a minute," answered Sophy, who soon began to kick the quilt from over her. Her older sister came in. "How you behave Sophy," said Mary, "you will surely be late to breakfast. Shall I help you?"

"I can dress myself," cried the little girl, tumbling out of bed. She began to wash, but she washed dolly, not herself. She began to put on her boots, but played puss in boots instead, to the great disgust of pussy, who tried hard to get out of her clutches.

"Sophy," said Mary, "you will be late." At last the breakfast bell rang in good earnest.—"What will father say?" asked Mary; for father wanted all his little flock around the table in season.

"Don't care," muttered Sophy, hurrying a bit at the same time. But who does not know that Hurry is not helpful? and Hurry soon overturned a tumbler of water over Sophy's clean stockings. "Oh!" she cried, angrily. In getting another pair from the drawer, the little girl jammed her fingers, and there was another "Oh!" and a bitter one, too. Then her hair had to be brushed; but Hurry hid the brush under her night-gown, for Sophy was in no mood to let her sister stay and help her, so she had to help herself. Helping one's self is a fine thing for a little girl; but Hurry this morning made Sophy lose her temper as well as her brush, and her comb, and her pocket-handkerchief, so that when she finally appeared at breakfast table, she lost her father's smile, also. Putting his arm around her to receive her morning kiss.

"Has my daughter got out of bed the wrong side this morning?" he asked gravely. Then Sophy could not help crying; and it made her lose her appetite and her breakfast, for the sweetest bread and butter never tastes good to anybody who gets up the wrong side. Poor Sophy! And I am afraid lessons and school felt the cloudy effect of it all day. Does not all day usually have to suffer for it, little girls?"

There is a right side to get out of bed, is there not? Oh, yes. Prudy got up so this morning. How did Prudy get up? The robins that built their nests on the elm tree over her window waked her; or perhaps it was the sunbeam kissing her face. Prudy waked from a sweet sleep, and opened her eyes wide.

"Oh!" she said aloud, "I am in my own little bed, ain't I?" as if it was quite queer to be there. Perhaps she had been dreaming, "Far, far away." Then she looked out of the window, and saw the sky glowing with the beautiful morning light, and she thought maybe it was God's face smiling on her. That made her so happy. She crept out of bed, and stepped softly into her mother's chamber. Her papa

was out of his place in bed, and she climbed into it. It was very sweet to lie down beside mother and baby.

"Prudy," said mother, "baby was sick and wakeful all night, do not disturb him now. Run back to your little chamber, and dress yourself." Oh, how Prudy wanted to stay, and she would stay so still, I am sure; but she did not ask or tease to stay. She kissed her mother, and gently and quickly crept back again.

Just as if Prudy wanted to nestle somewhere, she tip-toed into Tom and Harry's chamber, and appeared like a small white angel by their bedside. "Do, Prudy, be off," cried Tom, "and not come disturbing us." Henry, on the contrary, seizing poor Prudy's nose, gave it a grip quite too tight for comfort.

"Oh!" cried Prudy, "please do not;" and with eyes full of tears, she ran back to her chamber.

Prudy did not get exhausted by these early morning efforts, but set about carefully to dress. She washed herself, and spread the wet towel carefully on the rack. She brushed her hair, and put the brush back in her own little drawer. Her boots went on hard, but she tried and tried, and neatly tied the strings herself. Then she kneeled down, and thanked God for his kind care of her all night, and prayed him never to let her be cross, or unkind, or proud, or vain, but to forgive her sins, and fill her heart full of his love, and make her just like Jesus when he was a little child on earth. After that she took a little book under her arm, and went down stairs to find her papa. Papa met her and kissed her, and called her his "dear, dear daughter."

Did not this little girl get up on the right side?—*Child's Paper.*

[Written for the Valley Farmer.]

UNSYMPATHISING NATURE.

Birds are companions,
Flowers are friends;
And who has not felt
The low whisper of winds?
There is language in tempests,
A voice in the sea,
Communion in forests,
In brooks, melody.

Yet be not their votary;
They only are friends
When the full heart, outgushing,
The melody lends.
For Nature, impartial,
Is deaf to thy plea:
Heart alone can respond
To the heart's sympathy.

A. Diogenes.

An adopted child will, in time, become the daughter of the household. It is wonderful how tendrils will twine around household plants.

"Now you'll see what we'll do," as the little drops said when they came to swell the river.

Private correspondence.

LETTERS FROM LIFE.

In the Sanctum, September, 1863.—It is Sunday afternoon. The sun is out, bright for the first time since the great storm; and I find I miss the awning. But I am not much sorry, considering how it got down. It is a consolation to know that the wind did it—clearing away such cob-web things, and doing it so nicely. It has been trying to take it down all summer, and I have been in constant dread that it would succeed. Well, it is satisfied now, I suppose. So we are at last friends.

There is a different look in the sanctum; it seems all open, as it were, so great is the light let in, and so clear—an afternoon light. I have just been taking my tea; and the snow-white cloth (my aunt's doings) agrees well with the light; so do the dishes, which are also white, except the gold rings of the china.

In the Evening.—There is a clear sky, out of which comes a pure wind, giving life and animation to the world. This is health; showing what nature can do if she wills—and right after this terrific storm (mentioned in my last). And she does these things without "let or hindrance," all in her own way. Sometimes her way is a severe one: but in the end it comes all right. How she afflicts us with malaria! and then how she clears all up again! So it is now. There is an exhilarating *feel* in the air, that is worth all your stimulants.

When the heart is all right, and it is well with a man, so that he is happy, and nature around him is happy (as she will be), then it is that life is worth living for. And we each of us have such moments—but all, all unexpected—surprising us. This enjoyment is not in nature, as we think. It is in us; and we reflect it upon matter, so that, sometimes, the meanest object is pleasant—any object that we may happen to look upon, unless really repellant.

And this happiness—all happiness—partakes of the joys of youth. We seem to see our childhood days in everything that is happy around us, i.e. that we have made happy. We think it is our youth that is so happy; and how we are wishing for those times again. But our youth was rather a sorry thing. All our crying was done then, and we were looking to our manhood for enjoyment, forgetting, even now as then, that the enjoyment is always in us.

It is very unwise to seek for happiness. We are sure not to find it if we seek, and yet we are seeking all the while, almost every moment of our lives. Sometimes in our idlest moments, pop comes the happiness; and we forget all about our wishes, so pleasant is the moment. But there must be health to the body, and contentment to the mind. This is happiness.—Wealth! oh, how deceitful is its pursuit! Thank Heaven, there are some who do not seek after it, and who are happiest without it. And yet, these have the keenest enjoyment of money. The feel of a bank bill is a soft feel to them, and a coin is a hard, valuable substance. There is something pleasant about it, even its ring. Momentarily they enjoy it, as they would a flower, a sun-set, a fair face; but it is not the

one desolating thought—which reminds me of this: we must have variety in order to be happy as well as healthy. Variety is the great secret, say what we will. The great minds of the world have said so; we see it around us; our own experience teaches it to us. Monomania, is to have the mind upon one subject. A healthy, properly-balanced mind, is to have to do with the world's variety as it is presented to us. Oh, how few people realize this! Let us try to make us as healthy as we can, and as contented, and we shall be happy—not always; that is impossible. The mind cannot long sustain a strong tension, for happiness is a stimulant, and it must have its re-bound, its depression. This is inevitable. Let us always remember this. We must have our ups and downs. This is life. However, if our enjoyment is moderate, so will be the ups and downs. But enough of this.

Past Noon.—The sun rests on the south side of the hill (oh! how quiet!) on these September days, as if thinking of the time which will soon come, when the blasts of autumn will be moaning there. But a few more days. And it seems meditating on the time. Quietude is its expression. I see, as I direct my glass, that a few flowers are scattered along the hillside. Plaintive little things they are; yet they wish to be gay in this sunshine, forgetting how sad is the sunshine. They extend, brighter than ever, their delicate little fringes; bright little children of the sky—

> "As if that sky let fall
> A flower from its cerulean wall."—[BRYANT.

How little they think that I am viewing them at this distance, seeing all their coquetting! Innocent, deceived little things of a moment; as evanescent as the mist, or this mild sunshine itself.

October first.—I just returned from a visit to *her*; the second visit since her return from hop-picking. She returned, I believe, in the evening. I am not certain, however, as I have not inquired, for I might find out some things that I would not like so well. I will rather not know how she got home. I have, since she is back, found out that a lad picked half a box of hops for her, and that she is pleased about it, and that the lad is a relative of another who formerly (a year or two ago) paid his attentions to her, and who had a very fine voice, as has the present lad, the voice probably being a reminder of the other's voice, and of "long ago." But she never encouraged the addresses of the other; and for reasons that are anything but disagreeable to me. I also ascertained that she flirted while absent, and with another old spark of her's. All this you will say sounds unpleasant. Not so much so to me as you might think; for the motive is the thing. The motive was in part right. She loves, as all girls do (i.e. handsome girls), flirting. As I before said, I forgive her this. But the other motive is altogether a different affair. She was goaded to it by what is the most pleasant thing in the affair; that which, without in the least tainting her, or touching her affection, reveals to me what of all things I most wish to know—what, however, I have all along pretty well known, namely, affection for this scribbling inmate of the sanctum.

She is a desperate flirter: more so than any one I ever knew, and that is saying something—wild, paroxysmal, as if she cared not whether there were a ship-wreck or not. And yet she does it in her demure, quiet way: fate in coolness, at which times her face is somewhat whitened, and her eye like a lance, yet not excessively bright. It is always, however, bright: and never so bright, and never so soft a glow on her face, as to-day. Ah! these desperate flirtings are jewels: for they do not touch her in the least. They are the whip of correction; and mean, not love for the whip, but the object of the whip. It is this that makes null all this disagreeable action. And what sorrowful faces are the result of it. Perhaps she is to blame. But I think hardly. So it is easy to forgive. She is young and inexperienced, though a light of wise-archedness beams out of her eyes. She is the silliest child I know, to my sorrow I often say it, and yet the archest, wisest of her age; which reminds me of what an old friend (spark) of mine once said, that she had "leaden eyes," which was another "whip." She was then playing with a lot of juveniles of her age, sweet fourteens, just looking upon the wonderful field of womanhood, and yet "must give a sweet delay to the youthful day." She was the tallest of the circle that were swinging round, and the conspicuous beauty of them all, the lily of the group. The remark stung me somewhat, and since then there has been a widening of the gap then formed, until all is substantially cool, that is, the "spark;" but she, lily that she always is, a rather substantial one, a sort of rose lily; and that she is, for her cheeks are often white, used to be so almost continually, which led me to call her "pale face." Now there is a ruby color, with alternations of white, sometimes dapples of red and white. Her teeth agree exactly with this: they are the whitest ivory, with that regularity which shows the youthfully developed mouth: the canines a little longer than the rest. When she laughs, these, with the bi-cuspids give the touch to the cheek, and are much more beautiful than the front teeth, although these are absolutely faultless. I am posted on teeth, and know how to appreciote this. The thought never entered her head, and here I have the advantage of others. When she shows these side teeth (not the molars), her cheek—but I will stop this at present; for I know perfectly well that you think I exaggerate, when I do not in the least, so far as I know.

So, her flirting she has been freshly indulging in, is of little consequence. In the four weeks that she has been gone, and the chance she has had for flirting, I find (this I could not well help inquiring after) she has comparatively done but little. Why? Because she had no reason.—There was the natural motive, which she gratified to a certain and innocent extent. Innocent! There must be no shade here. And yet the outside influence is universal: all—the keenest, the most powerful, the handsomest—all have tried their influence; but they have not tainted in the least the pure petals of this lily. To be sure,

she has not been much from home. But she has been some, sufficient for all this. This satisfies me most royally well. She is pure; she will be pure. Do you shake your head? It is like your doctrine; it is not mine. I believe (and God help me if I shouldn't) in that rare possession, virtue. And she, C., possesses it. She is a little, demure, keen-eyed Quaker. Her bring-up has been somewhat of this Quaker kind—not much—and there is in her what is not of the Quaker kind. She is one of us—of myself.

She is much, I was going to say almost entirely, different from other girls. I am sometimes much displeased with this; I am sometimes entirely put out with her, and vow I will have nothing to do with her. This looks very much like the course of love that never runs smooth. Does it not? It probably is that: love, if you please.

When I called to-day, she was in her best spirits and color — wearing that everlasting old dress, that I never liked, for it does not become her, though it sets off her person, which has charms that are always irresistible. But she has dresses that become her better. Then she works hard, and is a willing little worker, and does all kinds of work, so I forgive her the dress. Her eye and her face are, however, all the brighter for this.

But she was so pleasant to-day, this forenoon, in the midst of her work: a faithful little maiden, the cynosure of all eyes, doing her work in her demure, steady way, singing much, half by snatches, like a bird.

She has one bad propensity. I don't know whether I have mentioned it or not. She is quick in her temper, once in a while; "pettish" is the word I have probably repeated a hundred times; and yet, the next moment, as like as not, pleasant again, showing that this pettishness is the exception and not the rule. Once or twice she asked my forgiveness immediately after the petulant humor. Of course I forgive her, as I always do. During the summer, especially the latter part, she has had frequent occasions for repentance. She sees that it mortifies me, and so she is on her guard. So it is seldom, of late, that this petulant mood is seen, but a radiant face instead. It was so eminently to-day. You will say, "I would not like this temper." In this, I am glad to say, you are wrong, for to others she is not so. She is especially good-natured and sweet-tempered to others; full of affection to the children, bearing much more from them—much more than I would. This satisfies me that her general nature is pleasant. If she is sharp to me, she perhaps has reason. I think she has. I have not responded to her affection as I should; as one in earnest would have done, for I never was in earnest really. I could not help have an affection for her, even while she was little more than a child, this affection growing with her growth, for like a flower-bud, she kept expanding till she was the full grown flower she now is; just full grown, with all the freshness of the dewy morn upon her.

But of late I find I am getting in earnest, somewhat unawares, that is, I find myself planning, as if I were in earnest, and throwing hints of the same to her. To look over the field, I find I have half popped the question. And this it is probably that the more attaches her to me. She has even half consented, or rather, it consented itself before she really was aware of it; or was it that she really clung to it with gladness? It so seemed then, for she has been the most unhappy of all human creatures, this same, simple young girl: unhappy because I made her so. It was hard to resist such fascination, and even slyly, almost accidentally, make advances.—And I am my own master, and can marry her if that is all. i.e., I feel confident that I can. But, as I said before, I never seriously contemplated marriage. She did: I will say as much as that.

Did I wrong all the while to encourage her affection? Sometimes I felt misgivings of the kind. And then I vowed to be circumspect. But these vows were all, somehow, caused by some little out-fall between us, for I am very sensitive, and apt to exaggerate trifles of this kind, which in itself, perhaps, shows something.

It is now six, eight, ten years, I may say, since this thing has been going on; the truth is, I cannot say exactly when it started. When I look back, I find it has been gradual, until at last—now—it seems at the culminating point; I see a great advance: in truth, there seems something ripe for a consummation. I am forever-lasting, brooding, dwelling on the subject, without giving you incidents. Incidents! what incidents are there? There are many little ones; many enough. But they are much alike; quarrel, make up, that's the tenor. I have often, a hundred times, thought I would have it all make-up, or stay-up, all favor, all happiness. And here I have learned the common lesson, which all, I presume, learn that are engaged in the same business; fighting against the impossible. What will come of all this? I cannot answer it as well to-night as any time before, or not as before, at least not with the same assurance. I say I will never marry her. Something shakes its head. It is this little blind monitor, feeling.

Yesterday, when I called, she was not to be seen, though I had heard she was at home. I was there, in the front room, some fifteen minutes, perhaps not so long. I still saw nothing of her. I then inquired where she was. Her aunt (now guardian) told me, tossing her head that way "in the kitchen," the door of which was open, and right at hand. Could she have been there all this time, and not shown herself, not said a word, all as still as though she were not there? I stepped in; she came forward, all smiles and freshness. "I thought I'd see whether you'd inquire after me:" exactly her words.

It is thus that we play at hide-and-seek. You see she is yet a child, in part. Then comes in the ravishing thought, ripeness, woman. Such a child she is. And such I see her daily, a child-woman. Will such a child-woman be a wife? which is altogether another question, but still a question.

I thought I would give you incidents, but I see it is all one incident yet. This much I will

say before closing, that to-day and yesterday, but especially to-day, she was more pleasant than usual, irresistibly so.

I shall probably go there to-morrow. Of that there is very little doubt. And thus between the berry-field and the sun-light, and autumn, and her—I am passing away my time; not all, only my idle time. But I sometimes make idle time. Though no one will say I am idle, for I am ever busy.

It is eleven P. M. They have all gone to bed below. The air without is as still as the grave. There is moonlight: Alexander Smith's "broken moon" getting ready for the last quarter.

Next Day.—It is cloudy to-day. But that other sky is not cloudy. I called over as usual to see her. She was even an improvement on yesterday. All things considered, she never looked so favorable before, that is, there never was so little to object to. Once there was a slightly wicked expression (I should perhaps say mischievous), but it lasted only for a moment. These changes are a characteristic which I don't like. She said nothing wicked; and this, I thought, was an improvement. Indeed, she is all the while improving, not in looks, but in disposition and intelligence. I lay it all to her youth—these defects—and I think she is rather an apt scholar.

I was there one full hour, though in a hurry when I went there, expecting to go elsewhere. In all this hour she acted very discreetly. The truth is, I am instructing her, almost without intending it. I don't know that I ever thought of it before. I know my wishes were that way, that is, for her improvement.

When I returned, I found a fresh, snowy pie on the table; brown rather, but reminding you of the snow, so clean and fresh it was. This my aunt brought in while I was gone. She also brought a row of biscuits, these were snowy. She has gone to visit a friend. Already I have been regaling myself on her bounty, which she undoubtedly guesses is the case. Yesterday I took dinner with her, in company with a niece (of her's), feasting on mackerel (No. 1). I presided over the tea-pot, brittania, an heir-loom; and I made it (the tea) *a la Soyer*, by heating the dry tea in the dry vessel, heating it till it slightly raised a smoke, then poured on the water. All praised my tea. Aunt was in raptures at the discovery, so she is not "too old to learn," though that is imputed to her. There are many slanders in the world. It is, however, a sad affair when one is so much dependent on his aunt.

Sunday Eve.—Dear C., I have given myself up wholly to the influence of this girl. Perhaps I am wrong; but I think not; and this itself is a pleasant thought. I have been critical my life time, not easily suited; and she does not suit me. There are things that I sincerely regret; but less and less so as she gets older, so that to-night I seem to see her in a better light than I ever did before. I have been making a rigid comparison between her and another, one who has all the qualities for a commercial bargain. The intellect would approve of her. But she is different, entirely different, from my own little pet, and is really a most excellent woman. The comparison came out in favor of my little pet. She took the palm. Not her bright eyes alone did it; nor her quiet, gliding walk; nor her youth; nor her whitest, freshest beauty. The gliding limbs, and the sweet smile everywhere, these are bewitching; but they are not all. She is poor—in purse. I like that—I do (at which you will turn up your nose), for it will make her dependent upon me; she will lean upon me, which is natural for a woman; the man should be the provider, the supporter. He should be looked up to, as the flower to the tree and protect. Then, she has no annoying relations, I shall be quiet, with my quiet little wife, her voice also quiet, low, loving like a bird when it shrinks out of the way of its stumbling brood, and seems to say, "Take care," with a slight, fine ejaculation. Such a bird she is now: was to-day, this afternoon; shall I say an improvement even on yesterday? Truly. She had a gray dress on, a real Quaker, as if there was Quaker about her, which there is not. Yet I call her that, because she is safe from the possession. This is a long paragraph, and a long evening. The clock has just struck eleven. She is asleep now, sweetly. She dreams, sweetly. She is happy, daily; her every breath breathes it. In church to-day, she was the only face there, the others were not seen. I wish I could describe it to you; but I cannot. In the morning, the first thing, she will be singing; early up, she will be busy, in her quiet way; her way is noiseless, just the thing for a sick room, just the thing for me, when I am in my moods. Then her hand, the quiet movement, and the face gleaming here and there, lighting a poor man's habitation. Will not this soften the couch? a couch that has heretofore been so desolate, that is already, in contemplation, easier.

There are many who never realize these things. They marry hard—hard cash, hard looks, hard thoughts, a hard, hard couch. And shall I marry the other, which the intellect approves? I shall never do such, any such a thing. There are two kinds of men in this "round world of ours," as Martha Wyatt says: the one the emotional, the poetic; the other the hard, the moneyed, ignoring love, affection. There is then a great difference in our motives of marriage. We should consider that difference. It is a necessity growing out of our natures.

I just now know a man, and he is near by, and a near friend, who made the great, the unfortunate mistake of marrying, not as he should, as he wished to, but partly from pity, partly from lucre; not that he loved money, but he was in a "tight place," and the wife helped him out. He is not disappointed in her good qualities, which she has abundantly, but it precludes all marrying for him hereafter (for his present marriage is not marrying, but accommodation, necessity): the advantages of true marriage are all cut off. He realizes this, and suffers in silence. I pity him, I take lessons from him. And this sweetens up the memory again, of what is in store for me, for her also. And is not this worth all the disappointment, the sorrow of my friend?

He has committed the irretrievable error—the work of circumstance. He could hardly avoid it, so he thought.

The clock strikes twelve. But six short hours, and another day opens with its sights; the song will be heard, and thus time glides on. But I fear it glides on too long for this letter. Adieu!

Beeber.

FANCIES FROM KEATS.

I was light-hearted,
And many pleasures to my visions started;
So I straightway began to pluck a posy,
Of luxuries bright, milky, soft and rosy;
A bush of May flowers with the bees about them;
Ah, sure no tasteful nook could be without them!
And let a lush laburnum oversweep them,
And let long grass grow round the roots, to keep them
Moist, cool, and green; and shade the violets
That they may bind the moss in leafy nets.

—

Here are sweet peas, on tip-toe for a flight—
With wings of gentle flush o'er delicate white,
And taper fingers catching at all things,
To bind them all about with tiny rings.

—

How silent comes the water round that bend!
Not the minutest whisper does it send
To the over-hanging shallows; blades of grass
Slowly across the chequered shadows pass:
Why you might read two sonnets ere they reach
To where the hurrying freshnesses aye preach
A natural sermon o'er their pebbly beds;
Where swarms of minnows show their little heads,
Staying their wavy bodies 'gainst the streams,
To taste the luxury of sunny beams
Tempered with coolness. How they ever wrestle
With their own sweet delight, and ever nestle
Their silver bellies on the pebbly sand!
If you but scantily hold out the hand,
That very instant not one will remain;
But turn your eye, and they are there again.

—

Sometimes goldfinches one by one will drop
From low-hung branches; little space they stop,
But sip, and twitter, and their feathers sleek;
Then off at once as in a wanton freak:
Or, perhaps, to shew their black and golden wings,
Pausing upon their yellow flutterings.

—

What next? a tuft of evening primroses,
O'er which the mind may hover till it dozes;
O'er which it well might take a pleasant sleep,
But that 'tis ever startled by the leap
Of buds into ripe flowers; or by the flitting
Of divers moths, that aye their rest are quitting;
Or by the moon lifting her silver rim,
Above a cloud, and with a gradual swim
Coming into the blue with all her might.

—[Nature and the Poets.

Good writing writes itself; it is a mere effluence of the mind. Aside from this, dulness or affectation is the result. And habit (of writing) is as indispensable to success, as breathing to life.

"There are three umbrellas," said little Nell. "The hat is one—the smallest; the umbrella is another; and the sky is the third—the greatest of them all—but also the leakiest."

SCRAPS.

(NEW AND OLD.)

A young man being asked by his sweetheart what phonography was, took out his pencil and wrote the following, telling her that was phonography: U R A B U T, L N!" (You are a beauty, Ellen!)

"Mr. Smith, have you any crinoline?"

"No, ma'am. We don't deal in that line."

"We were all children once, my dears."

"La, ma! then who took care of the babies?"

Odd Husbandry.—Marrying a widower in clover to a widow in weeds.

"You are a good one to go first," as the bristle said to the awl.

"Sambo, where is your master?"

"Gone out."

"Has he left off drinking, yet?"

"Oh, yes, sure! he leave off two, tree time dis morning."

"Now see what smiles" (of flowers) "I shall get," as the sun said when he rose.

There is a lesson in everything, could we but see it. Many see it, but are too indolent to learn.

"I never could eat rye," said an old lady; "but since they're making it into whisky, I make out to worry a little down."

Life is happy at moments. Has any one ever added these moments together? If so, what is the sum?

Man is a mill; the stomach the hopper. Be careful how much grist goes into the hopper, as clogging and heat will be the result of overfeeding.

The Toper and the Mosquito.—The one puts out a finger, the other a leg, when they sip.

The boor likes better the breath of his oxen, than the prince the pomatum of his palace.

To drive a pig, take it by the tail; to please the woman that loves you, displease her first.

Heaven is in us, and not in the skies. We must, therefore, make our heaven here, and take it with us to heaven.

It will be seen that the happiest men are also the most miserable. Their capacity for both is greater.

A New Bed Bug Trap.—While the skillful apiarians have contrived effective traps for the bee moth, why has it never occurred to any one to make a similar application of mechanical ingenuity to the relief of poor humans beset with insect enemies? The thing has been finally conjured up, and now every bed can have its bed-bug trap, as well as every bee hive its bee-moth trap, both upon much the same principle, to wit: Take a board, say a foot wide and four feet long, puncture it with holes with a small bit, put it inside of the head-board and next to the bed and pillows; if there is a bug about the bed he will find the way to the holes in the board soon. Take it out of its place every morning, hold it over the fire or water, and give it a few raps with the hammer, then put it in place and repeat.

How to Make Tea.—Soyer tell us this; but he does not tell all. Steam-condensed water must never be used to make tea, as the insipid taste of the water is communicated to the beverage. This, the writer, has thoroughly tried, and he lays claim to the discovery. Water heated in the tea-pot, say a cup or two, will largely rise in steam; the inside of the vessel will run with condensed steam, so that soon there will be little left that has not been condensed. This will not make tea.

The true way to make tea, is to set your tea drawing the moment the water boils; fully boils. Have your teapot prepared in advance, by heating the dry tea in the dry tea-pot; the vessel being perfectly clean and sweet. Then pour on the hot water. The tea-pot will screech and ring. Set on the stove for a minute or two, and let simmer. Then off, and in another minute or two pour out.

THE MAMMOTH CAVE.

This wonderful natural curiosity is situated not far from Green river, in Edmondson county, Ky., and has been a great resort for travelers for many years past. Such is the extent of this great work of nature, that it has already been explored for about fifteen miles, and yet new discoveries are constantly being made. It is truly wonderful to find what shapes the earth and rocks assume in the interior of this cavern. Not far from its entrance there is a large rock, sixty feet long, having so much the appearance of a coffin, that it has been known for many years by the name of the Giant's Coffin. There are apartments, too, known as Purgatory, the Hall of Independence, and one in which echoes are so distinctly heard, that it is called the Whispering Gallery. One of these places is such a perfectly formed room, with a high rock pulpit at one end, that it is known as the Church, and services have actually been held in this underground chapel several times by invalid clergymen who visited the neighborhood in the summer months. There is a locality called the Dead Sea, and another (which is represented in the picture) is the river Styx, which is a long distance from the entrance to the cave; and beyond which the most interesting part of the whole is to be seen. The stalactites, which hang down like icicles from the top, and the stalagmites, which form on the bottom, are often to be found in most beautiful shapes, and glisten like so many diamonds in the light of the torches. Such is the extent of these wonderful works of nature, that one might spend weeks before becoming thoroughly acquainted with them. Truly, all of God's works are wonderful.

SELF-RELIANCE.

A man must *hew* his way; he must *work* his fortune. You might as well undertake to build a house by sitting down, and waiting to see the frame go up, as to achieve success in life without effort, positive, persevering effort. Men who have acquired the highest fame, have been the most unrelaxing climbers up the steep ascent. Your own hands and feet have got to do the climbing. The world advances only by effort, in all its departments. Self-made men are the men that generally advance it.

A lazy man is therefore out of question, so far as personal success is concerned. Ease and luxury are the drawbacks upon progress. Luxury generally ends a nation; and it is inherited; it is rarely an individual acquirement. In old civilizations there are many heirs to rich estates. Such men are seldom good for anything, except to indulge their appetites.

Ah! fame then is dearly bought. No greater truth was ever said; and all men who have acquired it, uniformly say so. Why then should we seek after it? For its own pleasure in obtaining it. What! pleasure in labor? Indeed. Is it news that labor is a pleasure? The efforts of ambition are always accompanied by a known pleasure. There is the love for the calling, and the object to be attained. And unless a man possess this relish, this genius for his pursuit, he might as well "hang up his fiddle" in the start, for it is many cases out of but a few more that he will fail. But whatever his case may be, whatever his pursuit, however much is to be done; he must do it *alone*, do it *himself*; shoulder the thing, and bear it out to the end. It is like going into death—you must walk the valley alone. And then you will succeed. But it must pay as you go along; pay by the stimulus of ambition, the love of the pursuit, the contemplation of it, as the poet, the artist, contemplate. There are flowers along this rugged steep, and cooling fountains, all the rarer for the great effort, the heights at which they grow. These are pleasures that the slothful man knows nothing of. And this is life, stirring, active life, with the health of the keen breezes in it, and the early sunrise. Such men experience; and are therefore the men who develope and reflect human nature, the world at large; in fact who do what is done. We must therefore do ourselves if we wish to succeed: take hold of the plow, and keep hold of it.

BLACKBERRIES AS A SUMMER DIET.—Dr. Wood in his *Practice of Medicine*, rates the blackberry as one of the best fruits of the season for summer invalids. Dr. Wood is a standard author. We can testify by experience to the correctness of this author's testimony. Use blackberries—use them plentifully. Set them out in your garden; and then you will be sure to have them; you can get them ripe. Dr. Wood says they must be ripe: bear that in mind. We have frequently spoken of the benefit of the blackberry, and we shall not cease to urge the matter.

HABIT.—Habit! We wish we could give the reader a correct idea of habit. It is so much more potent than is generally imagined. It is the great controller in all the departments of life. A trade must be learned—not taught merely, but practically learned, so that the individual will get the "hang" of it. The "hang" of it: that is the thing.

Habit learns us to walk: without it we could not walk. We could not even close the hand; nor feel a thing. We could not see, nor hear appreciatingly; much less think; much less become great thinkers, or great physical workers. We all know the habit of smoking; of drinking liquor; of idleness; the habit of spending money, of hoarding it; the habit of gaming. So the true student has the habit of study; the indolent and the undistinguished, the habit of *not* studying, only poring over books mechanically. Habit has a secret power that but few know, and only they that closely apply. They work miracles (to the world) with it. That makes Milton; that makes Newton; that makes good men—the practice of good deeds.

APPLES AS A DIET.—We shall recommend in a separate paragraph, the use of apples as a portion of diet. So important we deem the subject. Apples are slightly aperient (cathartic), and keep the bowels in fine condition. There seems to be something more than the mere aperient principle. Apples will digest in an hour and a half (sweet apples, sour in two hours). This is in a raw state, when fully ripe and mellow. When cooked (as we recommend them) they are still better. Apples may be thus used for ten months in the year; June and July being destitute of apples in the raw state. Still they may be used as a dried fruit, though the effect is not so beneficial, at least not so grateful. A good aid then is Graham bread; bread baked from unbolted wheat flour, the wheat ground very fine, or the coarse part sifted out if ordinarily ground. This, for a few months, will pretty well supply the loss of apples. The past summer has been a severe one for costiveness. The treatment indicated in this paragraph would have remedied the evil.

Editor's Table.

CLOSE OF VOLUME XV.

We now send the last number of Vol. XV to our patrons. It seems but a short time since we wrote the last article for Vol. XIV, but as we look back upon our labors we find that one long year has passed away since—long while we were passing through it, but how short it seems now that it is gone forever! We can look upon the results of the year with a good deal of satisfaction. When we commenced the last volume, such was the unsettled condition of the country we feared we should have but few subscribers, and that we would be compelled to publish our journal at considerable pecuniary loss. But thanks to our warm agricultural friends, and to the liberal spirit of Western farmers, our fears have not been realized. Our subscription list swelled beyond our most sanguine expectations, and while we have not made much pecuniarily, such is the high price of printing and publishing in these times, yet we have saved ourself from loss.

It is an encouraging sign of the times, that even during such a civil war as is now enacting—the greatest the world ever saw—and in our very midst, even among hundreds and thousands of our readers—that an Agricultural Journal can be and will be supported.

We think the volume now closed will compare favorably with its predecessors, and that our readers have no just cause of complaint. Indeed, we are daily in receipt of the most flattering letters, all bearing testimony to the usefulness and value of the VALLEY FARMER. We confess that we have not devoted as much of our time as we should have done to preparing matter for its pages. In such unsettled times as these no man is master of his own time. Still, if half of what we have written and published be heeded, we think an immense amount of good will be done to the cause of Western Agriculture and Horticulture.

The new volume will commence under much more propitious circumstances than did the last volume. It has a much larger list of readers to re-new their subscriptions, and to speak a good word for it to their neighbors and friends, thereby inducing them to become subscribers. Farm produce is higher, money is plentier, and we now hope that our subscription list will be swelled to its former proportions, before the war had cut away one-half or two-thirds of our readers. We shall be thankful to our friends for their favors. We believe our journal is a want in the Mississippi Valley, and that it will continue to be sustained. We can promise that the new volume will be superior to that which we now close. We are determined to keep our eyes open, and to record in the varied departments of our journal everything of interest to our readers that is transpiring.

We thank one and all who have borne the near and dear relation of reader to us the past year, for their patronage. We believe there has been, and that there should be, a sympathy between editor and patron. An editor should feel a deep interest in the welfare of his readers. He should no more mislead them than he would his own children. He should feel as deep an interest in their welfare as he does of his own bosom friends. We can tell our readers frankly and truly, that such is the interest we feel in them—that we are constantly reflecting upon the best way of benefitting them—that their interest is our chief study, and that we would be delighted if we could have more of their co-operation by writing for our journal, giving the results of their practice and observations, and thus making the VALLEY FARMER EXCELSIOR among agricultural papers.

We hope all of our readers will jog along with us another year, and we shall gladly welcome all upon our new subscription books for 1864. It is hardly necessary to state, that our uniform practice is to send the FARMER no longer than the time it is paid for, and subscribers should not feel hard towards us for not continuing the paper after their term of subscription has expired. If they knew how many thousands of dollars we had lost before adopting the rule, they would not blame us for being as strict as we are.

We would urge upon one and all the importance of renewing immediately. "Procrastination is the thief of time." It has frequently happened that by delaying to re-new we have been out of the first number or two, and thus the volume is broken. We try to have numbers enough to supply all, but sometimes fail.

Monthly Hints for the Garden and Orchard.

We have the pleasure of announcing that our esteemed horticultural friend, Mr. CAREW SANDERS, who, in former years, has written much and ably for the VALLEY FARMER, has consented to take up his pen again, and furnish our readers with Monthly Hints for the Garden and Orchard during the coming year. We have no hesitation in saying that these hints from Mr. Sanders' pen will be worth more than the subscription price of the FARMER to every reader. The interest our readers feel in horticultural matters, is constantly growing, and we shall do all we can to cultivate that interest and make it thrive. Our journal is largely devoted to horticultural matters, and we intend to give this department more attention than has heretofore been given it.

HEMP AND TOBACCO CULTURE.

We have on hand two valuable essays for publication, written by L. J. Bradford, Esq., President of the Kentucky Agricultural Society—one on Hemp Culture and the other on Tobacco Culture. Mr. Bradford being a practical cultivator of these crops, as well as a very intelligent gentleman, the directions contained in the essays for cultivating these crops may be relied upon. One of these essays will appear in the January and the other in the February number. Both of these crops can be cultivated at great profit at the present high prices of these products. We have no hesitation in saying that these essays will be worth more than the subscription price of this journal for one year to every cultivator of hemp and tobacco.

THE LAST NUMBER.

Our readers will bear in mind that this is the last number of Vol. XV. Those whose subscriptions expire with the volume will not receive the January number till they renew for 1864. The best time to renew is now, while you are thinking about it. Enclose one dollar in a letter to the editor or publisher, and it is done. The FARMER will then continue to come right along. Can you expend a dollar to better advantage? If it don't go for the FARMER it may go for something less worthy. Induce some of your neighbors and friends to join you. Get six subscribers and send us five dollars. How many will do this?

THE KANSAS STATE JOURNAL, after noticing several of our most popular agricultural papers, thus speaks of our journal:

THE "VALLEY FARMER."—This is a monthly, and published in St. Louis. The latitude of its publication suits Kansas perhaps better than that of any other paper. Its columns are largely devoted to the discussion of topics peculiarly interesting to the Kansas farmer.

The best papers that we have read on the cultivation of cotton, tobacco, hemp, sugar cane, and all of those crops which are specially adapted to Kansas soil and climate, and which may be grown here with average success, are published in the "Valley Farmer." We are glad to notice its growing popularity among our farmers.

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PETERSON'S MAGAZINE.—We are in receipt of this popular Lady's Magazine for December. It is a splendid number. "Peterson" will be greatly improved in 1864. It will contain nearly 1,000 pages of double column reading matter; 14 steel plates; 12 colored steel fashion plates; 12 colored patterns in Berlin work, embroidery or crochet, and 900 wood engravings—proportionately more than any other periodical gives. Its stories and novelets are by the best writers. In 1864, Four Original Copyright Novelets will be given. Its fashions are always the latest and prettiest. Every neighborhood ought to make up a club. Its price is but Two Dollars a year, or a dollor less than magazines of its class. It is the Magazine for the times! To clubs it is cheaper still, viz: Three copies for $5, five for $7,50, or eight for $10. To every person getting up a club (at these rates), the publisher will send an extra copy gratis. Specimens sent (if written for) to those wishing to get up clubs. Address, post paid, CHAS. J. PETERSON, 306 Chestnut St., Philadelphia.

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PREMIUM ESSAY

ON THE CULTIVATION OF THE

Sorghum and Imphee Sugar Canes

AND THE BEST METHOD OF

CONVERTING THE JUICES OF THE SAME

INTO

SYRUP AND SUGAR:

WRITTEN FOR THE VALLEY FARMER.

BY

EDWARD F. NEWBERRY, WALSHVILLE, ILLINOIS.

PRICE, - - FIFTY CENTS.

PUBLISHED AND FOR SALE AT THE VALLEY FARMER OFFICE, ST. LOUIS, MO.
1863.

PREMIUM ESSAY

ON THE CULTIVATION OF THE

SORGHUM AND IMPHEE SUGAR CANES

AND THE BEST METHOD OF CONVERTING THE JUICES OF THE SAME INTO

SYRUP AND SUGAR.

I do not design entering into a very learned or elaborate treatise on this subject. If I understand the Editor aright, he wishes a plain, *practical* tract, which may serve as a manual or hand-book to the beginner, guiding him through the somewhat intricate mazes of the business into the highway of success: yet into which even the more experienced worker may look, with a reasonable hope of finding some useful hints: I shall therefore avoid, as far as possible, the use of scientific phrases, and content myself with simple English.

I have been engaged in the culture and manufacture of the Chinese and African canes for some years, and have experimented somewhat extensively. I will give you the results of my experiments, and also whatever *reliable* information I may have been able to gather from others. I say reliable information, for I know of no other business about which more reckless statements have been made than the one under consideration. Without any further preamble I will commence by noticing first,

THE DIFFERENT SPECIES OF CANE.

There are two of these, as before stated, viz: The Sorghum or Chinese, and the Imphee or African cane. We are acquainted with a number of varieties of each. Some insist on considering the two species as merely varieties, referring them both to one common origin. In such case the sub-division will be merely sub-varieties; and if there is any such botanical term as a sub-variety I am not acquainted with it—that's all. I prefer treating them as distinct species, which is more convenient, and which will confuse nobody.

The Sorghum is much more used for making Syrup than the Imphee. The latter, has generally given the best satisfaction in whatever attempts have been made to manufacture sugar. A few words concerning the history of these plants may not be uninteresting. Their names indicate their nativity. A few seed brought over from France (where it had been cultivated for some time) produced such marked results, that the Agricultural Department appointed a committee to investigate the subject. They accordingly (in 1857) imported one hundred pounds of seed, which was distributed from Florida to Nova Scotia. The results of course varied greatly, depending on the difference of soil, climate, mode of planting and cultivation, and the degree of skill manifested in working up. Enough however was ascertained to prove the almost incalculable value of the plant.

It is not known how long the Sorghum had been cultivated in China, before being introduced into other countries. In 1853 considerable sugar was imported into California from that strange land. It was put up in sacks of about 75 pounds weight. But no attention was paid to the circumstance, as it was supposed to be the product of the Southern Cane. The real fact has since been ascertained.

The Imphee or African cane was also introduced by the Patent Office (a year or two later I believe), but has been somewhat overlooked until quite lately. It is of more southern origin than its *confrere*, the Sorghum, and consequently does not flourish as well in high latitudes as the former. There are as many as eighteen varieties mentioned, whose barbarous names I will not worry the reader by enumerating.—Three of these are the only ones worthy of mention, viz: The Oom-se-a-na (a as in ah!), Boom-bwa-na, and the Nee-a-za-a. They all however

differ from the Sorghum in producing fewer suckers. The stalks are also shorter and thicker at the base and the seed heads or panicles more compact. Most of the varieties require a longer season to mature than the Sorghum. The three varieties above-mentioned will, on proper soil, ripen in from ninety to one hundred days, and are superior both for syrup and sugar than any of the others.

CULTIVATION OF THE CANE.

The mode of planting, cultivating and securing both species, being almost identical, I shall treat of them collectively, and:

1. *Climate.*—The Sorghum will grow successfully as far north as forty-three degrees. Higher than that point it will hardly mature. The successful limit of the Imphee is somewhat lower; although here, as in many other respects, authorities are at variance. Some claim a shorter season for the Imphee than the Sorghum. This conflict of opinion, I am forced to believe, arises from the difference in the variety grown by the different individuals. There really exists in the several varieties a difference of forty days in the period required for ripening.

The southern limit of the cane is not determined. Large crops have been gathered in Florida and Texas; but owing to imperfect manufacture, the quality has not yet been tested, and the present political troubles will probably interfere, for some years, with any satisfactory knowledge on the subject.

2. *Soil.*—There is also great conflict of testimony on this point. All, however, I believe, concur in preferring *poor* soil to that which is *extremely rich*. My own experience establishes satisfactory to myself, and to all in my vicinity, the superiority of a bright clay soil over all others, such as is usually found in the skirts of our timber land, particularly where the post-oak groves exist. For three successive years, one man has brought to my mill Sorghum cane, grown on soil of this kind. It produces invariably the most beautiful honey-like syrup possible, of which from fifty to seventy per cent, crystalizes, making sugar fair as clarified. The first year I considered the result a mere accident. The second year I persuaded my neighbors to obtain seed from his ground, thinking that perhaps there lay the secret. The third year convinced me that I must look elsewhere for explanation. For although there was great improvement in the quality of their cane, still none could compete with his; and no doubt remains in my mind that the vast difference was principally due to the soil. He alone of all my patrons resides on land of the sort described above. His farm has been in cultivation for forty years, and the other crops, excepting the Sorghum, are quite poor.

I have a piece of land part of which is poor sandy loam, facing the south; the rest is bottom land, very rich in vegetable mould. The cane grown on the upland, makes excellent syrup, not crystalizable however, (I am now speaking of Sorghum), while the bottom produces a very large growth of stalks whose value for syrup does not compare with that of the former, requiring from ten to eleven gallons of juice to make a gallon of syrup, and that of a dark color and poor flavor; the other requiring no more than half the amount of juice to procure the same quantity of syrup—worth half as much again. I continued the experiment two years, when I abandoned it, being fully satisfied in my own mind about the matter.

I manufacture cane from at least forty different farms, and the results are so uniformly in accordance with the above conditions that I am compelled to arrive at the following conclusions:

1. That light clay soil will make the best syrup and most sugar from either species of cane.

2. That sandy or gravelly loam, ranks next in value for the same purpose.

3. That rich bottom land should be avoided if possible.

Others may differ from me in these points. Such (as I have before said) is my own experience.

SELECTION OF SEED.

Pure seed is a *sine qua non*. As all of the varieties will mix with each other, and also with broom-corn and the Dourah or chocolate corn, great care must be exercised in procuring seed. Each variety must be planted separate and alone. Half a dozen stalks of broom-corn will injure a patch of cane a quarter of a mile distant. So will the Dourah. Seed from cane adulterated with these plants will produce dry, worthless stalks. One man brought to my mill an acre of cane, fully sufficient in bulk to make two hundred gallons of syrup; the yield was forty gallons of a very poor quality. He, in his ignorance, had gathered his seed from cane grown side by side with broom-corn. The present year he obtained his seed from the timber farm mentioned above, and his syrup is beautiful and abundant.

Seed should be gathered from the stalks that first ripen, and especially from those lots which

have produced sugar. It should of course be perfectly ripe, and when cut, should be tied in small bunches and hung up in some dry place. Only the *upper* half of the head should be used, as that part will produce earlier and more vigorous plants. This applies particularly to the Imphee, whose season of growth it is very desirable to shorten as much as possible for reasons to be mentioned hereafter. Seed can be obtained from me warranted pure and unadulterated. It will require from a pint to a quart of seed to plant an acre, according to the method followed.

TIME OF PLANTING.

The Sorghum is a much hardier plant than Indian corn, and can be planted two weeks earlier. Some of the best cane I ever saw was planted on the fifth day of March, 1861. The ground froze four inches deep, a day or two after, and remained in that condition for more than a week, without affecting in the least the vitality of the seed. Indeed, it will lie on the top of the ground all winter, and come up thick as oats as "volunteers" in the spring. Frost which will kill the young corn to the roots, produces no effect on the cane. As the season for manufacture is very short at best, every effort should be made to plant as early as possible. The first week of April is probably (taking one year with another), as early as the ground can be put in good condition in the latitude of St. Louis.

MODE OF PLANTING.

This will vary according to the different views and situation of the cultivator. When land is scarce and labor plenty, I would advise planting in *drills*, as a greater yield can thus be obtained per acre. In such case, after putting the land in *thorough tilth* with plow and harrow, it should be laid off in very shallow drills three and a half feet apart. The seed should previously have been soaked in warm water 24 hours; or, as some advise, in a solution of chloride of lime, in the proportion of an ounce of the chloride to a pint of seed. It should then be put into a sack and buried in some moist, *warm* earth until it begins to germinate, which will hasten the growth a week. It should be dropped thick enough to *insure* a healthy, vigorous plant every nine inches (others say a foot, but this I consider a waste of ground). Don't spare the seed. It is better to thin out than to replant. *Cover very lightly*, not over an inch, and still less is preferable. This seed, of all others, must have light and air, or it will rot.

Where several acres are planted, a very speedy method is to cover with the harrow, by running lengthwise with the drill. This does the work effectually, and I have tried the plan with good success.

Most will prefer to plant in hills like corn, so as to tend it both ways with the least trouble; and at present, while labor is so scarce and land is moderate in value, the method no doubt is to be preferred; besides being easier to cultivate, it can be stripped, topped and cut with greater speed. In this case seed enough should be dropped to insure from four to five stalks in each hill.

I will give the results of three different half acres, planted (side by side on the same day) in three different ways, enabling the reader to learn at a glance the comparative yield, and thus to decide which method to pursue in his own case. The first was planted in drills in the manner aforesaid; the second was planted in hills four feet each way; the third in hills four feet one way and eighteen inches the other, (three stalks in a hill). The yield was respectively, 112, 84, and 101½ gallons.

MODE OF CULTIVATION.

The cultivation of cane differs but little from that of Indian corn, except that its growth, at first, is quite feeble, and it should therefore have at least one good hoeing in order to keep down the grass and weeds which otherwise would overrun it. When, however, it attains the height of two feet, it "goes it with a rush," and its rapid growth fully compensates for its former sluggishness. The plow and cultivator should be freely used until it is three feet high, when it is abundantly able to take care of itself.

STRIPPING.

This is the most tedious part of the labor required in securing the crop. Several methods have been proposed to expedite the work. For a large crop planted in hills, I have found the best as follows: Take a good, strong, dung-fork, with a longer handle, if possible, than usual; make a stroke or two in each hill, and you will take off the major part of the leaves; the few remaining ones can be pulled off by hand afterwards. Some use a wooden knife four or five feet long, and three or four inches wide. It does very well. As to the time of stripping, opinions again conflict. Some contend that this operation should be delayed until the very day the cane is cut. The reason advanced is this, viz: that there is in the leaf a bitter principle which is absorbed into the stalk (by means of the sheath which is left on) if the stripping is

performed long before cutting, giving to the syrup a scorched or bitter flavor.

That there is such a bitter principle present in the leaf, none will deny who will taste it. But I very much doubt its absorption into the stalk after stripping. My own practice has always been to strip six or eight days before cutting, believing the ripening to be hastened and the juice enriched thereby; and such I find to be the opinion of many engaged in the business. "Let each be fully persuaded in his own mind."

TOPPING.

I would have said that all agree that topping should be identical in time with cutting, had I not seen this fall some patches standing headless for eight or ten days before cutting. Nature endeavors to restore the prematurely lost head or panicle, and the formation of saccharine matter in the sap is thereby checked. None who try the plan once will be tempted to repeat the experiment. The cane should be topped at least below the first joint (counting downwards). Many mistake the insertion of the top leaf for a joint, and cut accordingly. The juice above the first joint is insipid and disagreeable, and should on no account be allowed to mingle with the rest. I prefer to top even a joint lower; and I know the syrup to be much improved by this course, while the diminution in quantity is too trifling to take into account.

TIME AND MANNER OF CUTTING.

Cane should be perfectly ripe when cut. This period becomes evident by observing the head and also the color of the stalk. The seed should burst open the top of its casing or husk, and the whole head should bend over from the weight of the perfectly matured contents. The color of the stalk changes from a green to a rich yellow. This change is much more preceptible on cane grown on the light clay and sandy soil than that of the rich bottoms. In the latter case there is but little change, the stalk retaining to the last the most of its dark green color.

But whether ripe or not, the cutting must take place *before any severe frost*. What is called a white frost does not injure cane so far as I have discovered. But one sufficient to freeze the stalk in the least, renders it necessary to cut and work up immediately, (that is, within twenty-four hours, if the weather should turn warm,) otherwise the juice ferments and the cane is *spoiled*.

The bitter flavor spoken of above, and attributed by some to premature stripping, I have no doubt is caused by allowing the cane to stand exposed to too much frost; even if it does not entirely freeze the stalk, still it is enough to alter the flavor of the juice. Better, I think, to cut even while considerably green than when frost-bitten. I have made quite passable syrup from cane, not a seed of which had turned black. It was very fair and of tolerable consistence, although it had the greenish twang always to be found in syrup made from immature cane. When planted before the first of May, both the Sorghum and the earlier varieties of the Imphee will be ready to cut by the tenth or twelfth of September. This will give a season of ten weeks for manufacture.

Shall the cane be worked up immediately? Or will it keep with safety? This is an important matter to decide—and here again manufacturers do not agree. For making syrup (of crystalizing I shall discourse hereafter) I much prefer to let the Chinese cane go through a seasoning or curing process, which certainly improves the flavor, by entirely removing the greenish twang so much objected to. The syrup which I exhibited at the last winter meeting of our State fair, was made the 6th of December, and of course was the best of my production during the season. The only objection urged against it by the committee was, that being so light colored, they feared that it would not stand the heat of summer. I used it on my table all winter, and many times it was mistaken by visitors for strained honey. I mention this to show that there is no loss in *quality* by keeping. Now for *quantity*. We worked up four two-horse loads of cane on the 15th day of November, 1862, which made fifteen gallons to the load, of syrup so thick that it weighed twelve and three quarters pounds per gallon, of a beautiful bright red color, and flavor unsurpassed by any we have made this season. The cane had been on the ground seven weeks waiting for its turn. More on this subject I consider unnecessary, except you will remember I am talking of *Sorghum*, not Imphee. That species will not keep so well. The longest I ever allowed any of that to cure was four weeks. It was slightly sour, although the acidity was easily corrected, by lime-water, and a fair sample of syrup was obtained.

A common corn-cutter answers perfectly for cutting. The stroke should be made quite slanting so that the cane may be easily fed into the mill, which will not be the case if left blunt. Care should also be taken to cut clear of the roots, unless you wish the feeder at the mill to say naughty words. The first few inches from the ground is comparatively valueless. From experiments made to test the comparative rich-

ness of the joints, it is found that the lowest or first joint (counting upwards) is to the third, fourth and fifth, as six is to eight, nine and ten; so that if you wish to make a very nice specimen, reject all but the third, fourth and fifth joints.

I should have observed before, that sometimes when time is pressing and danger of a heavy frost is imminent, the cane may be shocked without stripping or topping, just as Indian corn, and when the danger is past and a time of more leisure occurs, these operations can be performed and the dressed stalks brought to the mill. There are various methods of securing the cane when cut, which to prefer depends upon convenience. If some distance from the mill and a press of work interferes, it can be corded on the ground in height not over four feet, and covered with straw, or its own leaves (when not saved for fodder). Generally, however, it will be found best to haul at once, and either cord or shock at the mill. I much prefer the latter, as it allows freer circulation of air amongst the stalks, and dries out the superabundant moisture, greatly accelerating the "seasoning" process. To shock easily and well, requires a strong stake split cross-wise at the top, into which splits a couple of boards four feet long, should be inserted, forming a letter X. This will amply support the cane. When the shock is finished, some of the begasse from the mill should be thrown upon the top, and the work is done. When corded, both sides and top should be covered with the same, and the cane will keep as long as required. So much for the cane—now for crushing it.

MILLS—GRINDING.

The kind of mill required for crushing will depend upon the extent of operations proposed. If intended to work up twelve or fifteen hundred gallons per season, a one-horse mill (iron of course) will be sufficient. For twenty-five hundred or three thousand gallons, a two-horse mill will be required, and so on in proportion.

There are many different mills offered to public notice, nearly all of which lack the one grand desideratum—STRENGTH. Forgetting that in most cases they are to be managed by men entirely ignorant of mechanical laws, and being naturally desirous of getting the greatest possible amount of money for the least possible expenditure, the makers generally fail to use sufficient weight of metal, or else do not put it in the right place. I have experienced great vexation and loss of money from these faults. The first mill (one-horse) I bought, was made by Douglass Brothers, Ohio. I soon made a general smash of the whole concern. It was warranted to grind a barrel of juice per hour. It could not stand the strain of half that amount. I learned where the trouble lay, and had me a mill built to order, and since then have not been delayed ten minutes by breakage.

A one-horse mill should have three rollers, the driving shaft of which should be two and a half inches in diameter, the others two inches ditto, ditto. Some prefer the rollers all of the same size; others that the driving roller should be double the diameter of either the other two; others, still, that it be half as large again. I do not suppose that much difference in draft results from corresponding difference in size. My chief objection to those of equal size is that the driving cog-wheel having to sustain as much friction as both the others, soon wears out, and it is not always easy to replace it. In some mills you will find the cog-wheels above the rollers; in others below. I much prefer the latter, believing that it divides the strain of the draft.—The shafts should be fastened into the rollers by strong keys both at top and bottom, and *not cast* into them, as I have seen; because, in case of a shaft breaking, the roller and all must be re-cast; whereas, in the former case the broken shaft can be easily removed and a new one inserted. These things I have learned to my cost. Some mills fail in convenient oil ducts, and this is a matter of no small moment. Do not trust too much to the interested representations of mill makers or their agents. The experience which I give you as a practical man, you will find of more value than you may at present imagine, and may save you many a dollar and great tribulation. Should you chance to live some distance from a foundry, you may lose weeks of time in the course of the season, besides the cost of repairing—no trifling item I can assure you.

For a two-horse mill, the rollers should be fourteen inches long, the driving roller sixteen inches in diameter, the other two eight inches each. The shaft of the driving roller should be three inches thick, the other two, two and a quarter inches. I should have mentioned before, that the rollers for both the above mills should be perpendicular, as no gearing will be required, and there will be much less danger of breakage. For mills of much greater draft, horizontal rollers are preferable. The sweep should be *nearly balanced* on the mill, and should be as long as is consistent with safety, in

order that the horses may travel in as large a circle as possible; this contributes greatly to their comfort. The diameter of the circle should not be less than from twenty-two to twenty-four feet. For mills larger than the above-mentioned, gearing will be required, as they would of course be run either by a horse-power, water or steam. Such mills sometimes have five rollers. The best one I ever saw had but three. One large enough to work up one hundred acres of cane, would require a twelve-horse power to move it. The rollers should be twenty-four inches in diameter and two feet and a half long, geared so as to run sufficiently slow; otherwise the juice will fly off with the begasse. Such was the case with one I saw in Pike Co., Ill., where this fault was so serious that some of the farmers hauled away their cane refusing to submit to such waste. As I said before, the rollers should be horizontal, as this position renders the feeding process much easier. I presume mills of any size can be easily procured in St. Louis. My own (two-horse) was put up by Beach & Co., Litchfield, Ill., and a better mill need not be desired. They were not able to supply the local demand the present season. They intend the following year to be ready in time, and I would advise any living within reach to purchase of them, as they will be certain of a strong, durable mill. I have no interest in the matter, except a wish to benefit the public, by informing them where they may obtain what they need.

All small mills should have a guard (with holes for feeding) in front, to prevent any danger of falling or slipping against the mill. No less than three serious accidents have occurred within my knowledge, in each case involving the loss of an arm, for want of this precaution. It also prevents the liability of overfeeding, which not seldom ends in something breaking.

Two good hands can run a two-horse mill and grind out juice enough in a day of ten hours, to make from eighty-five to one hundred gallons of syrup.

All mills should be shedded over, that weather may not interfere with work.

EVAPORATION—APPARATUS REQUIRED.

These are—1. A shed: 2. Evaporating pans: 3. A cooler: 4. Skimmers, dippers, buckets, strainers, &c.

1. *A Shed* is required to protect from the weather, and also to keep out dust and trash which wars sorely against cleanliness. The roof should be perfectly water-tight, while the sides may be boarded up loosely so as to allow any number of planks to be removed at pleasure. A strong current of air blowing directly on the evaporator, keeps down the bubbles, thereby seriously retarding evaporation, and also preventing complete separation of impurities. No more wind should be allowed to enter than is necessary for the comfort of the attendants.

2. *Evaporators.*—These are of various kinds, the cast-iron kettles and wooden mills are obsolete: I shall not waste pen and ink over them. Sheet-iron pans, set upon brick furnaces, rank next; but they, in turn, must give way before the "evaporators" of the present. Of these I shall mention but four, viz: Gage's, Corey's, Miller's, and Cook's. Each have their advocates, each their merits and defects.

Of the first I have no experimental knowledge; it boils by means of heated steam circulating through coils of pipe lying on the bottom of the pan; it is costly and only suited for large operations.

The second, claims to be an improvement on Cook's evaporator, and so far as obviating the danger of scorching incident to the latter, (but which is entirely obviated by a simple method I shall hereafter mention) perhaps it is; still it is slower in working, nor does its results surpass those of Cook's.

Miller's cast-iron evaporator, in the hands of a beginner, is more easily managed than any with which I am acquainted. It is circular in form, some six feet in diameter, divided by a partition in the center. It is so hung on the furnace, (which is built of brick, and is also circular to correspond with the pan,) as to revolve at the pleasure of the attendant. Thus you can boil continually in one half of the pan while emtying, cleaning, and filling anew the other half. By tempering the fire towards the "strike," you need never scorch the syrup. The inventor claims extraordinary success in making sugar with his pan. The truth of these claims I have no means of investigating. I have seen but one sample (a half pound) made by a Mr. Seward, at Butler in this county. It was of inferior quality, while his syrup was excellent. I know of several who have abandoned Cook's and purchased Miller's evaporator.—Such, however, had never learned to manage the former properly, as shown by the quality of their syrup.

Cook's evaporator, in the hands of a competent manager, in my opinion, stands "*king over all.*" Its principle of construction is correct, and he who follows the course of natural laws in inventions of any sort is sure of success. It

is a shallow, oblong pan; the sides made of wood; the bottom of galvanized iron or (what is still better) of copper. This is "corrugated" or raised into bars six inches apart, one end of which touches the side, the other end fails to reach across by several inches. This occurs alternately, thus forming an obstruction to the straight-forward flow of the juice, causing it to run across the pan from side to side, and so to travel a distance eight or nine times the length of the pan before it escapes at the end of the last channel, when it emerges in the form of syrup. To regulate the flow of the sap, the pan and furnace (made also of sheet-iron) are both placed on "rockers," enabling the operator to exercise complete control of the current of juice by tipping at pleasure.

Mr. Cook was led to his invention by noticing the fact that the shallower the juice lay on the surface of the pan, the faster the evaporation, and the more complete the cleansing. Following up this chemical law, he soon discovered how he could bring the required condition into successful operation. There are at present some twenty-five hundred of his evaporators in use throughout the West, and, wherever properly managed, are spoken of in terms of unqualified praise. This proper management is indispensable, and the slight difficulty of acquiring it causes the only drawback to its universal use. A tyro can soon learn to manage it when he can obtain the personal instruction of an experienced hand for a few hours, although many first-class operators never saw one running until they started their own, and then their only instructor was the few directions printed on the side of the pan. These it seems to me might be made somewhat plainer. The finest specimens of syrup (at least those which took the premiums) and *all* the samples of sugar on exhibition (forty-six of the former and fifteen of the latter) at the last January meeting of the Illinois State Fair were produced on this evaporator, and there were present the handiwork of those before-mentioned as well as some others. Facts are stubborn things. I have not the least personal interest in the sale or success of Cook's or any other patent pan. I simply wish to lend my feeble aid in guiding those designing to commence the business in the purchase of what I consider the most perfect implements.

As I have said before, the only objection to Cook's evaporator, is the degree of skill required to run it. I would, therefore, say to any who may doubt his ability to acquire the requisite management, let him purchase Miller's. He resides in Laporte, Indiana, and any letter addressed to him on the subject will meet with instant attention. I do not know whether or not his pans vary in size; I presume they do. Those which I have seen will make from forty to fifty gallons of good syrup per day of ten hours, according to the quality of wood and the skill displayed in managing. The cost is fifty-five dollars.

Cook's evaporator is four feet wide and from six and a half to ten and twelve feet long according to number. No. 2 is the smallest, and No. 4 the largest, I have seen. The best are bottomed with copper. They will make from fifty to one hundred gallons of syrup per day. No chemical agents whatever are required for purification. Intense heat proves the best separator *yet* discovered. The juice lies on the pan hardly the thickness of this little pamphlet, and the concentrated heat underneath causes the most furious ebullition which throws all foreign substances to the sides of the pan, when they are easily skimmed off.

There being some whom necessity may compel to resort to common pans, I will devote a short space to their benefit. In order to boil thirty gallons per day, two pans will be required, each seven feet long and two feet wide; or, what is still better, a single one four feet wide and of the same length, with a finishing pan five feet long and two feet wide. The latter should have handles at each end in order to lift it from the furnace at each "strike" or finishing. Boil as *fast as possible* in the larger pan (purifying from time to time with a mixture of soda and white of egg), until the evaporation is about three-fourths completed, when draw off into the finishing pan, where you must boil with a slower heat. Constant stirring is necessary towards the last, as the thickening syrup is very liable to stick to the bottom of the pan and become scorched. I need not say that faithful skimming is indispensable in both pans. These pans need not cost over ten or twelve dollars, and by following these directions very tolerable syrup may be obtained, although by no means to be compared with that made with better implements. I will now proceed to discuss the remaining requisites, the next of which is,

Good Wood—without such it is next to impossible to work with success. Wood designed for use in the fall, should be cut and split the preceding winter, that it may perfectly season. No stick intended for the furnace of Cook's (or any other) evaporator should exceed two and a

half or at most three inches in thickness. That for No. 2 should be two and a half feet long; for No. 3, three feet; and for No. 4, four feet. Pin oak poles make a most excellent blast, and I find it the most economical wood of any that I have used.

Besides the shed, evaporator, and wood, we shall also need a finishing pan, in order to avoid the before-mentioned liability of scorching. This for No. 2, should be twelve feet in length, and two and a half feet in width; for No. 3, sixteen feet in length and same width; No. 4, twenty feet in length and same width. The bottom should be made of galvanized iron or of copper. The pan should set a little lower than the evaporator that a spout may lead from the latter to the former. At the farther end of this pan a gate should open into a

COOLER.

This is a long, flat-bottomed box, placed a little below the finishing pan, for the purpose of allowing the syrup to cool before storing away. Syrup, when barreled without observing this precaution, will, if boiled to proper thickness, continue to cook until it acquires a scorched flavor, besides darkening the color.

A tub, made of a half barrel, with a strainer at top (a shallow box perforated with half-inch auger holes is as good as you need), stands at the commencement of the first channel. A faucet is inserted at the bottom of the tub, by which to regulate the supply of juice. Skimmers are furnished with the evaporator. A couple of tin-dippers (pints or quarts) with handles two and a half feet long are also requisite.

As only two joints of pipe come with the evaporator, it will be necessary to procure two more; that you may have sufficient height of chimney to insure good draft.

When all is ready, I fill the tub with juice and go to work. I boil until three-fourths done; when I allow the unfinished syrup to flow into the finishing pan. At this stage it is necessary to taste it in order to discover whether any acid be present. If so, lime-water will neutralize it. If you wish to be very nice, use the sulphite of lime. The syrup creeps slowly towards the gate, cooking as it goes, and when completely finished is allowed to run into the cooler, where it should remain until its temperature is reduced to eighty or ninety degrees. It will then be safe to store away, although it is better to allow it to remain longer.

In order to determine how thick to boil, some use a saccharometer; others a thermometer; others still their sight and smell. I am one of the latter. I have never used any other means, nor do I think I ever shall. When the bubbles begin to send forth little jets of steam, resembling those found in a pot of boiling mush, your syrup is done. There is besides, a peculiar, *cooked* smell present, which, once noticed, will never be forgotten. If tested with a saccharometer, Beaume's should indicate about 36°; if with a thermometer, 228° Fahrenheit will be about the right figure. But the nose and eye will soon prove the most convenient and accurate meter, or test.

Some care must be exercised in preparing your barrels for a proper reception of the syrup. Second-hand molasses barrels, when sweet, are the best, of course. But we cannot always obtain them, and it becomes necessary to employ substitutes. I prefer a good, strong whisky barrel to any other I can find. There is no difficulty in neutralizing any acidity about them, by putting into each a quart of air-slacked lime, and filling with water. If allowed to stand for a week, and then *perfectly drained* of water, they will be completely sweetened. A new oak barrel I despise. I have never been able to entirely destroy the taste of the wood which will taint the syrup with its unpleasant flavor. Thorough charring of the barrel when in the cooper's hands will remedy the trouble a great deal. But syrup is a very penetrating article, and even if put in perfectly cold, will manage somehow to draw the harsh vinegar taste from the wood.

Other things being equal, the more honey-like in appearance, the better satisfaction it will give to the majority of your customers. But this quality should not be obtained at the expense of others still more important, viz: flavor, purity, thickness, and consequent power of keeping. Sorghum syrup is more affected in consistence by cold weather than that made from southern cane, and if purchased in mid-winter, it may appear very thick, when in warm weather it would run like water, and sour on the owner's hands. That which obtained the first premium at our last State fair, was of a bright crimson color, much the shade of good brandy. Many other specimens were fairer. But the flavor was most excellent. The committee very justly decided that that quality was of more importance than looks. For general use the manufacturer will find that color will have but little to do with giving satisfaction. The public wish it thick enough to warrant keeping, and clear enough to satisfy them of its perfect purity, so that when it drops from the

ladle it will appear like molten glass. Such syrup, you may depend upon will never be grumbled at anywhere.

GRANULATION.

For sugar making, the process is nearly the same as for making syrup, so far as regards evaporation. But generally in place of Sorghum we substitute the Imphee. Of this species of cane, there are but three of the eighteen varieties to be depended on for graining, viz: the Oomseana, Boom-bwana, and the Neeazaa. The first mentioned I like the best. The sugar made from it is lively, although dark, and after being refined will be equal to any. There is some talk of a new species of cane, called the Otiheitan (so called, I presume, from its *alleged* nativity), and large stories are in circulation in regard to its granulating quality. These must be received with some caution, as indeed must all statements about this branch of the business. Don't forget the Morus Multicaulis, the Baden and Peabody corn, the wonderful wheat yielding 300 bushels per acre. Speculation isn't dead yet, by a long shot, nor credulity either, I am sorry to say,

That the crystals are abundant in both the African and Chinese canes, is a fact established beyond a doubt; but that more knowledge than, as a general thing, we possess is requisite to develop these crystals with *certainty* and *profit*, is as much beyond doubt. Frequently, when all the conditions required for granulation are *accidentally* fulfilled, a splendid result follows. Forthwith the fact is blazoned abroad, and the good time is announced as having arrived, when we are all to have our barrel of sugar stored away as certainly as our barrel of syrup. The next year, however, we don't hear from the fortunate man; or, if we do, some unforseen accident has prevented his fulfilling the promised result. Now don't accuse me of endeavoring to throw cold water on the attempts to bring about this glorious future. I firmly believe that the problem is in a fair way to be solved, and that successfully. The accounts received from all quarters prove that every year the trials made, meet with more and more success. I know of several tons having been made within the past twelve months. I will now give you my own experience as well as that of others, in relation to this subject.

I have succeeded in producing granulation at every trial made during the last three years. The quantity has been small, as my time has been too much occupied in manufacturing syrup (of which I am unable to supply the home demand), to devote to the subject that attention it demands. But my experiments most decidedly prove:

1. That the three varieties of Imphee abovementioned will, if properly managed, crystalize with certainty in the proportion of from forty to sixty per cent. of the syrup, producing a moist, dark sugar, but whose crystals are large and perfect.

2. That the Sorghum grown on light, clay soils will frequently grain, making a much fairer sample than the Imphee. One of the batches was as white as the *clarified*. Mr. Cook, of evaporator celebrity, has also exhibited specimens superior to mine, made of the same species of cane.

3. That we have not yet discovered any method of graining all the syrup. In no case have I heard of more than seventy per cent. crystalizing.

PROCESS OF SUGAR MAKING,

In the first place, the cane must be *all correct*, by which I mean, grown on the right kind of soil and from the right kind of seed. It must also be properly secured when grown. Not a single bent, bruised or inperfect stalk should be allowed to taint the lot. Wherever a bruise occurs, there the cane commences to sour, destroying all hope of success. The cane must be ground immediately after cutting; the same day, if possible, and on no account later than three days. As soon as cut, the juice commences a chemical change, the crystalizable syrup being rapidly converted into uncrystalizable. This change does not at all interfere with the production of good syrup, as I have previously shown.

The cane should not be allowed to stand in the field until over-ripe. The same change commences as soon as it fully matures, although it is carried on much slower when standing than when cut.

The juice should be instantly boiled after being expressed. In the tropics they seldom allow thirty minutes to intervene between the two processes. The evaporation is carried on just as for making syrup, except that it (the syrup) is boiled a little thicker, viz: to 229° or 230° Fahrenheit, or to 37° Beaume. It is then run into the cooler and allowed to remain until its temperature is reduced to 90° Fahrenheit, and *no lower*, when it is emptied into large, shallow vessels (not more than three inches depth of syrup being desirable) and removed to the *graining* room. This is a room kept at an even temperature of ninety degrees. Much depends on

this point. Without attention to it, success is very uncertain. Usually crystals will begin to form in twenty-four hours. I have seen them quite plentiful in half the time. Sometimes they are very slow in forming. In such case, the process may be hastened by mixing a few grains of dry sugar with the syrup. These grains form nuclei, around which the granules begin to cluster. When graining is completed, the molasses must be poured off and the sugar drained. This is best accomplished by pressing it while still warm (90°) in a cheese or cider press, being a much more speedy and effectual method than that of hanging up in bags of open cloth, which was formerly the practice.

Miller, of Indiana, proposes to pour the syrup into barrels, the bottoms of which have been previously perforated with auger holes, and then plugged up with movable plugs. The barrels are then placed in the graining room, heated to ninety degrees. The sugar, on forming, settles to the bottom; the superincumbent syrup is then poured off, and the plugs removed from the bottom of the barrel. The remaining syrup escapes through the holes, and the sugar is drained. I think the draining could be more effectually accomplished by pressing, as described above.

There is a gum or mucilage present in the syrup, which interferes more or less with the graining process. Means may yet be discovered to entirely remove it, when the principal obstacle to perfect success will be abolished. Intense heat applied to a shallow surface of juice, appears, *as yet*, the best method.

The whole business is yet in its infancy; vast trouble was experienced by the Louisiana planters in their first attempts to grain their syrup; and extravagant wages were paid to men who could successfully manage the operation. If such was the case in what to us would seem the home of the cane, why should we feel discouraged at our want of *perfect* success in a business that none of us had even heard of seven years ago? I believe that either the States or the General Government should offer inducements sufficient to justify a man of the requisite chemical attainments to thoroughly investigate the subject. Twenty, thirty, or fifty thousand dollars could not in my opinion be better spent than in aiding a discovery, which would save millions annually to every State in the Union.

Thus have I endeavored, to present to the inquirer, the results of my own experience in this new and interesting business; and also the experience of others, wherever I could gather any statements upon which full reliance could be placed. It is an easy matter to sit down and draw on paper a fanciful picture of what is to be in the glorious future; I prefer to offer plain, unvarnished facts for your consideration. Let us now sum up and present at a glance the pith of the entire lesson:

1. Procure good, pure seed, without regard to cost or trouble.

2. Plant as early as the middle of April on moderately, poor clay or sandy soil, away from small grain to insure immunity from chinchbug.

3. Plant as shallow as possible, just covering the seed; they must have light and air.

4. Cultivate well both by hoe and plow.

5. Strip your cane a week before cutting, or leave until ready to cut, according to difference in views.

6. Do not top until ready to cut.

7. Cut as soon as fully ripe.

8. Be sure to cut and secure before heavy frost.

9. Procure a good, strong mill.

10. Provide all the implements needed sometime before the season arrives, that you may commence work as early as possible.

11. Intense heat and shallow surface of juice are the best purifying agents.

12. Boil thick if you would have your syrup stand the heat of summer.

13. Perfect cleanliness is no unpardonable sin.

By following these simple rules, any person of ordinary judgment and intelligence will be able soon to obtain good results from his labor. I may be considered by some as dwelling to much on minutiæ; but whoever such commences this business, will, I think, speedily alter his opinion. A knowledge of these very minutiæ would have saved me many dollars and much tribulation. All the treatises on the subject which I have met, abound in general directions, but very little advantage could I derive from them. Probably I was too stupid. So I was obliged to dig out by myself pretty much all I have learned. I trust the readers of this little tract may have an easier time.

PROFITS OF CULTIVATION AND MANUFACTURE.

The statements in regard to growing Sorghum and converting it into syrup and sugar, vary so widely that it becomes impossible to give any more than a general approximation.

I will first present to you my own results from a single acre, and then those of others whom I consider worthy of confidence:

Rent of ground,	$2.00
Plowing deep in fall,	1.25
" spring,	1.00
Harrowing, marking and planting,	1.50
Cultivating (plow and hoe),	2.50
Stripping, topping and cutting,	3.50
Hauling, say 12 loads,	4.00
Total Expenses,	$15.75

PRODUCT.

175 gallons of syrup at 40 cents per gallon,	$70.00
30 bushels seed at 20 cents,	6.00
½ ton fodder, say,	2.00
Total Product,	$78.50

The manufacturer is allowed one-half for working up, leaving $35.00 to the farmer for his share of syrup, making the matter stand thus:

Syrup,	$35.00
Seed and fodder,	8.00
Total profit,	$43.00

The expenses are perhaps above the actual cost of production. I am obliged to hire all my labor performed. I think the amount of syrup produced per acre about a fair average. I have worked up cane that yielded 350 gallons per acre, and some that would not exceed 80 ditto. Much depends upon the "stand." Some cane will be weak in saccharine matter, some extremely rich. Much also depends on the stage of maturity at which the cane is cut. It must be *ripe* to insure the greatest (as well as best) yield. Much also is lost by imperfect grinding. All these conditions may seriously affect the result.

Many in their calculations claim an average of two hundred gallons per acre. I do not doubt their correctness. The land where I reside is not of the richest. But I believe the quality more than compensates for lack of quantity.

The price per gallon may also be considered too low. I estimate by wholesale. My price per gallon, is fifty cents; per 10 gallons, forty-five cents; per barrel, forty cents. Mr. J. H. Smith, of Quincy, Ill., informs me that he retailed at *seventy-five* cents, and lower in proportion. Mr. Roberts, of Jacksonville, makes about the same statement. I have not been able to supply the home demand at the above-mentioned price, nor could I if I had triple the amount to spare. Mr. Miller, of Indiana, sells at sixty cents. Mr. Smith contends that twelve hundred pounds of sugar or two hundred gallons of syrup should be considered an average.

Let us see if the manufacturer obtains a suitable return, for his labor, skill and outfit.

To run a one-horse mill, capable of making an average of forty-five gallons per day, would require:

Two hands at the mill,	$1.75
One man and boy at the furnaces,	1.50
One-half cord of wood,	1.00
Horse-feed,	0.15
Total,	$4.40

Forty-five gallons at 40 cents per gallon would be $18.00, half of which is $9.00, leaving $4.60 profit—not a bad turn out for so small an outlay, viz:

Mill,	$45.00
Cook's evaporator, No. 2,	45.00
Finishing pan,	4.00
Shed over furnaces,	20.00
" " mill,	20.00
Cooler,	3.50
Horse,	100.00
Furnace for finishing pan,	3.50
Dippers, skimmers, buckets, &c.,	3.00
Total,	$244.00

The farmer of course owns his horse, and can do much of the work of preparation, thus saving a great deal of the outlay. Suppose the season to last ten weeks, or sixty working days, the profits would amount to $276.00, a sum considerably more than the whole cost of beginning. Where the proprietor works himself this sum is of course increased.

Let us now take the two-horse mill:

Three hands at the mill,	$2.50
Two men at furnaces,	1.75
One cord of wood,	2.00
Horse-feed	30
Total,	$6.55

The mill with the above force can average ninety gallons per day, half of which is forty-five. Forty-five gallons at forty cents is $18.00.

Earnings per day,	$18.00
Expenses per day,	6.55
Clear profit,	$11.45

COST OF OUTFIT.

Mill,	$65.00
Cook's evaporator No. 3,	65.00
Finishing pan,	12.00
Furnace for same,	6.00
Other appliances,	5.00
Sheds for mill and furnaces,	50.00
Horses,	200.00
Total expenses,	$403.00

Sixty days work at a profit of $11.45 per day would amount to six hundred and eighty-seven dollars. Incidental expenses will of course occur, to somewhat diminish the profits. Poor fixtures will be found most miserable economy—particularly *poor mills.* Better pay two prices for a good one than to take an indifferent one as a present. It will be found worse than the celebrated gift of the elephant.

The skimmings make first-rate feed for hogs; they will fatten on them as fast as on corn, and the meat is the sweetest imaginable, as I have tested. Corn should be fed to harden, but they will not eat much of it if they can get the other feed. A two-horse establishment will furnish enough to fatten half a dozen full sized porkers.

The begasse or pomace is by no means to be overlooked. When well crushed in an iron mill, one would suppose that all the nutriment would be removed. Such, however, is not the fact. When stacked up so as not to dry out, I consider it worth one-third its weight in hay.

Horses, cattle, sheep and hogs, all devour it gredily, and thrive well upon it. Some suppose it injurious, on account of the flinty rind or casing, cutting the stomachs of stock. I can only say that if such is the case, the stomachs of mine must be most wretchedly mangled, as I can get them to eat but little hay or corn-fodder as long as the begasse is within reach. Possibly, when a half-starved brute may suddenly be supplied without stint, some such trouble may occur.—Those who are allowed to run to it freely will only pick the tender pith, in which all the nutriment is found. I would advise every farmer who is any ways short of feed, to haul back a load every time he comes to the mill with cane, provided the proprietor will permit.

I have made better vinegar than can usually be purchased, by simply heating the juice, thoroughly skimming it, allowing one-fifth of the water to evaporate, and then putting into open barrels to ferment. Fermentation can be hastened by the addition of a little yeast. The natives of Independent Tartary distil a brandy from the juice, which, whatever else may be said of it, can bring the drunk equal to rifle whisky.—The seed I consider worth as much as corn, weight for weight. My chickens live entirely upon it when they can get it. What part of the pomace may be rejected by the stock should be spread upon the land and plowed under, thus restoring as far as possible what has been substracted from it.

In short, every part of the plant can be put to some economical use. Did you ever eat any *buckwheat* cakes made from the meal of the seed? If not, try them once with some good butter, and plenty of A No. 1, Sorghum syrup, and see how they go. Quite passable wine can also be made from the juice by a very simple process. It has considerable body and is equal to the ordinary sherry.

No wonder that the cultivation of this interesting plant has increased so rapidly, and is at present exciting so much attention. Five years ago, the first considerable importation of seed was made, and the last year (1862) finds several States entirely independent of either the South or foreign countries for their supply of syrup. And I fully believe that shortly we can snap our fingers at 'em for sugar too. It is estimated that the Great West has raised the present season 250,000 acres of cane, and made from it 70,000,000 gallons of syrup! Besides, the yield of sugar is also worth notice. As far as I can learn from correspondence on the subject, and from statements I have met in the various papers, not far from one hundred tons of sugar have been grained this year, giving, I think, ample foundation for the aforesaid belief.

Of this amount of syrup and sugar, Illinois has made the most. Indiana the next greatest quantity. Ohio and Iowa stand about equal.—Other States have worked proportionate to facilities of soil, climate, interest and means of information on the subject.

The largest establishment in Illinois, and probably in the West, is at Loda, on the Illinois Central Railroad, one hundred miles south of Chicago. They have worked up eight hundred acres of cane this fall, at the rate of ten acres per twenty four hours. They grind stalks, leaves, suckers and all, being so compelled from scarcity of help. The syrup is said to be dark in color, and I presume not perfectly purified, as they boil in large pans heated by steam, instead of applying the fire directly to the juice. They hope, however, to remove all this color and cloudiness by the process of refining. Mr. Belcher, of the Chicago Refinery, receives the syrup as fast as it is made, and it no doubt comes out of his hands in the form of golden syrup equal to that obtained from the southern molasses; at any rate, if it equals in quality that which I tasted last year.

I cannot say whether the business on a scale of such magnitude is a paying one or not.—Whether or no, I presume the great majority of workers will be content with more humble machinery. Steam mills of any size will, as a general thing, be found to require more outlay than

business men will desire to invest, until the ratio of profits therefrom is reduced to a greater certainty. Horse power will for the next few years grind out nine-tenths of the juice, and the simple evaporators already mentioned be used for boiling. Meanwhile, American ingenuity will, with characteristic eagerness and intensity of purpose, fully investigate the whole matter. Until then let no one rush blindly into the business. Commence on a small scale; and first learn to make a GOOD article. Increase in extent with the increase of your experimental knowledge. So to the farmer—plant a moderate amount of cane, cultivite it *well*, have it *well worked up*. Better to haul your cane five miles to a thorough, careful, cleanly workman, than to allow a bungler to spoil it, even if he will manufacture it gratis at your very door.

Follow these suggestions, and my word for it, you will *feelingly* appreciate the immense increase of comfort and saving which the introduction of Sorghum has bestowed upon us as a nation. Thousands of families throughout the West who have hitherto looked upon a gallon of Southern syrup as a luxury, coming like angels' visits, few and far between, now feel that they are far behind the times if they have not a barrel of Sorghum stored away in the cellar for the coming year.

In conclusion, allow me to say that I hope I have succeeded in so simplifying matters, that the tyro may go to work with some idea of *what* he ought to do, and *how* he ought to do it. If I have I am content. E. F. NEWBERRY.

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